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# The Indian Police Journal

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# Editorial

Terrorism is a global phenomenon and in India it is being aided and abetted not only by the extremist outfits but also fuelled by the foreign powers. Over the years, it has manifested itself in bloody incidences and has relentlessly been targeting to weaken the institutions of democracy and country's socio-economic fabric. Government of India in coordination with Government of the States and Union Territories is making all out efforts to mitigate these challenges. The Government's effort of demonetization of select Indian currencies has proved to be a meaningful step in right direction. The decreasing trend of terrorism activities and Hawala operations are indications that the step of demonetization has given a fatal blow to the operatives of terrorist machinery sitting across the country and also to the extremist outfits operating within the country.

Dr. Vinay Kaura, in his paper, 'Internal Security Scenario in India: Emerging Dynamics and Challenges' sketches the challenges that the stakeholders of Internal Security have to face. The paper mentions that, "despite the dominant public discourse on external dimension of India's national Security challenge, one should not lose sight of the internal dimension of internal security. India's internal security challenges have varied roots – from across the border enmity permeating as insurgency in Kashmir, to some ethnic groups opting for secessionist movements in the North-East, to sections of people resorting to violence to vent their grievances, to direct acts of terrorism aided and abetted by Pakistan and finally the social schisms in multi-polar populations."

In a related paper, 'Terrorism-Its Impact on International Business' Shri Manoj Kumar and Dr. Manu Chaudhary have discussed how terrorism has adversely affected business and economy world over. The study seeks to depict the relation of terrorism with various sectors of national and international economy and business. The manufacturing sector related with security and surveillance devices has, however, posted positive growth due to the efforts in tackling terrorism.

Lately, stress and mental health problems among police forces have emerged as virtual enemy affecting their service delivery and functionality. It has been relatively a worldwide phenomenon afflicting the security forces and taking toll on their health and efficiency. In 'Fighting the Enemy within: Combating Stress among the Indian Paramilitary Forces' author has examined the prevalence of stress among the officers and staff of one of India's paramilitary forces by assessing their mental, emotional and behavioural health using a computer-based self-assessment screening tool. As large percentage of paramilitary personnel are suffering from some form of stress, it has become imperative to evolve a system that fills gaps, find remedies to mental, emotional and behavioural healthcare by using appropriate screening to provide referrals, inter-ventions, and support services.

Policing in India has to be efficient and effective in service delivery to establish its relevance and legitimacy among the people it serves. In one innovative study, Dr. Mahesh Kumar Maurya, in his paper 'Role Expectations of Police Personnel: Development of the Tool and of Its Psychometric Structure' proposes an indigenous tool to assess the role expectations among the police personnel. In spite of the understanding about the ambiguity that police personnel generally face in the context of execution of their duty, there is lack of specific tools pertaining to Indian Culture for the assessment of police role expectations. To fill this critical gap the study has developed role expectation scales in Hindi and English.

Two articles on children have been incorporated. In the article 'Children of Incarcerated Parents', author has brought out the plight of children whose parents are imprisoned. Such children are not only orphaned but are also victims of the system & the impact extends to their entire life. The Government, society and the NGOs have an obligation to fulfil remedial measures towards such children.

This edition of IPJ has also given emphasis on accidents among children. In one such article the author has highlighted on fatal accidents of minor children falling from heights. The remedies suggested include increased parents supervision to changes in the home design.

Plea Bargaining is a subject whose salient features needs to be widely discussed. It can go a long way to reduce trial load & huge pendency of court cases. The present issue of the journal has given space for this important area of remedies.

Another interesting subject is illegal trade of medicinal plants, the author has talked about the illegal trade of many species of plants. Its continuous trade is endangering the plant stock and reserves from our environment. It requires urgent regulation and measures.

We have made a sincere attempt to bring out a wide range of topics of interest to not only law enforcing agencies but also for Public at large. I am sure Journal will not only make an interesting reading but will also broaden our knowledge.

Happy Reading.

**(Parvez Hayat)**  
**Editor-In- Chief**

# Internal Security Scenario in India: Emerging Dynamics and Challenges



Dr. Vinay Kaura

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## Abstract

Being home to one-sixth of the world's population and representing the world's largest democracy, India is a captivating coalescence of countless castes, ethnicities, linguistic and religious groups that has produced one of the oldest and most pluralistic societies. The vibrancy of India's democratic experiment combined with its heterogeneous society and rapidly growing economy has caught the attention of many observers around the world. However, today's India mirrors contrasting images. Its growing economic inequalities, communal divisions, dangerous insurgencies, terrorist attacks and increasingly polarized politics present a different and disturbing picture. It is left to the state and central police and security agencies to deal with the growing internal security challenges.

## Key words

Terrorism, Insurgency, Ethnic groups, North-east, Maoist, Kashmir, Jihadist, Pakistan

## Introduction

Despite dominant public discourse on external dimension of India's national security challenge, one should not lose sight of the internal dimension – internal security. India's internal security challenges have varied roots – from across the border enmity permeating as insurgency in Kashmir, to some ethnic groups opting for secessionist movements in the North-East, to sections of people resorting to violent solutions to their grievances, to direct acts of terrorism aided and abetted by Pakistan and finally the societal schisms in a multi-polar population.

Caste, regarded as India's original sin, continues to influence all contemporary social, cultural, educational and political debates in India. The significance of religion as a central component of the Indian worldview cannot be played down. Religious-minded segment of Indian electorate know what they want, and they know how to use their rights to demonstrate, strike, organize politically and vote according to their preferences and interests. Political parties catering to communal interest and solidarity have been demonstrating with greater frequency their advantages in mass mobilization. According to a UN report, "still nearly 300 million people live in extreme poverty in India and face deprivation in terms of access to basic services, including education, health, water, sanitation and electricity"<sup>1</sup>. As President

<sup>1</sup> UNESCAP Press Release, "India and the MDGs: Completing the task", 4 February, 2015, [http://www.unescap.org/sites/default/files/Formatted\\_Press%20release\\_India%20MDG.pdf](http://www.unescap.org/sites/default/files/Formatted_Press%20release_India%20MDG.pdf)

Pranab Mukherjee has rightly pointed out that “Security is no more confined to preservation of territorial integrity alone as it encompasses economic, energy, food, health, environmental and several other dimensions of National well being”.<sup>2</sup> Due to failure to improve the socioeconomic conditions of the vast majority of its populace, dissatisfaction with governments is rife, as expressed in India’s strong ‘anti-incumbency’ electoral culture. Special Economic Zones and large-scale land acquisitions for corporate purposes face strong resistance across India. Corruption and poor governance are currently preventing the inclusive growth strategy from being adopted in an effective manner. And without inclusive growth, there can be no true security in the domestic sphere.

## FACTORS AFFECTING INDIAN SECURITY

### Political Fragmentation

India’s security identity has been shaped by the concept of safeguarding minorities – caste, ethnic, and religious. During last three decades, India has witnessed extensive use of religion and caste in politics, resulting in the emergence and growing prominence of caste-based and communally-oriented political parties. The accumulation of power into the hands of local elites has been a major source of change in the Indian political arena. New institutions and norms of participation have provided maneuvering room to social groups which were hitherto powerless. The central government’s insignificant role in state and local policies allows regional issues to play a significant role in voters’ preferences. The availability of vast patronage system, largely due to the investment in developmental projects, has reinforced political competition at the local level. The existence of the single member simple majority electoral formula, combined with the stratified nature of social institutions, has allowed identity-based political parties and coalitions to frustrate the efforts of national parties to gain majorities at central and state levels.

Social movements usually produce a political outcome that could lead to new possibilities or paradigm breaking solutions. But the relationship between social movements and political parties are problematic in Indian context. The deep-rooted culture of personality-oriented politics and the deliberate avoidance of intra-party democracy prevent existing national parties from incorporating new socio-political movements into their fold. If new socio-political movements were co-opted by the established institutional machinery of the large political parties, it is likely that the impact of new social cleavages on the Indian polity would be diluted. As any convergence between the social movements and political parties is difficult to attain in Indian context, the former find their expression in challenging the existing political structures. Together, these factors contribute to the politicization of social cleavages in an environment of rising socio-economic inequalities.

India’s major national parties, Congress and Bhartiya Janata Party (BJP), have found it difficult to obtain absolute majorities in Parliament and coalition governments have become the norm over the last two decades. Small regional parties with even a handful of members in Parliament are able to obtain key Cabinet positions by taking advantage of the prevailing electoral calculus, sometimes holding Cabinet to ransom on issues potentially undermining national security or the government’s stated foreign policy. The trend has, however, been broken by the BJP in 2014 general elections when it obtained absolute majority in the Lok Sabha.

There is no doubt that the rising levels of political consciousness and increasing participation of socially marginalized segments of society is desirable for the vitality of Indian democracy, yet their

2 “Speech by the President of India, Shri Pranab Mukherjee on the occasion of call on by the members of the 55th NDC course and staff of National Defence College”, Press Information Bureau, Government of India, President’s Secretariat, 4 November, 2015, <http://pib.nic.in/newsite/PrintRelease.aspx?relid=130207>



political mobilization along ethnic lines can have vastly undesirable consequences for civic polity and political instability. Moreover, “an emphasis on group identities will, in all likelihood, also have the unintended consequence of reifying caste. Resultantly, far from producing a society in which age-old caste distinctions are steadily effaced and increasingly seen as atavistic forms of social organization, the politics of group mobilization will ensure that this primordial vision will continue to thrive”.<sup>3</sup> With the indiscriminate expansion of reservations, or the policy of positive discrimination, caste identities have become highly politicized. Pratap Bhanu Mehta aptly remarks: “Reservation could no longer be articulated as an ethical requirement; rather, it was seen as a manifestation of organized power. And as the nature of that electoral and organized power shifts, different groups will assert themselves, and use state power whenever they have access...When identity and interest so deeply colonize reason, every move will be seen, by one party or the other, as threatening war”<sup>4</sup>. Subrata Mitra has also drawn attention to challenge posed by the combination of radical rhetoric from below and populist policies from above. He observes that “rapid political mobilization without institutionalization can only contribute to governmental instability. The unhappy outcome is political paralysis, the wages of which are paid in the form of petty tyrannies at the bottom and ‘popular’ authoritarianism at the top”.<sup>5</sup>

In Indian context, religion’s considerable influence on urbanization and power relations in urban development cannot be ignored. Indian Muslims are the most urbanized community in India and they also form a huge pocket of mass poverty. The socio-economic decline of Muslims in North and West India has been partly responsible for the physical estrangement of Hindus and Muslims. And even if they happen to live close together, communal mistrust ensures that they do so in unconnected, insular ways. Besides other factors, communal riots have become so recurrent and disturbing in some cities that rich and poor Muslims have started to live together in the same locality to ensure their safety leading to ghettoisation of community. As Christophe Jaffrelot has illustrated that concentration of Muslims in particular pockets provide them best protection, he has also drawn attention to the negative implications of such process: “The Muslim ghettos, enclaves or slums that have developed in Indian cities may, however, retain a distinctive feature: they remain more connected to the Gulf countries, from where family members send huge remittances. This Gulf connection may take the separation process to its logical conclusion: the development of a de-facto sense of extra-territoriality, at the expense of national integration and citizenship.”<sup>6</sup>

As India’s economy has grown, it is relevant to note that its social diversity has manifested itself in the form of socio-economic inequalities, resulting in the uneven distribution of gains from development. India’s political institutions have witnessed a remarkable breakdown in significant parts of northern India in recent decades. Although a large part the country may now have a more mobilized electorate, the capability and effectiveness of institutions to meet the greater political demands are gravely inadequate. Dealing with domestic sources of insecurity is therefore no easy task for India’s political elite, especially when domestic factors develop linkages with broader threats in India’s security environment.

### **Terrorism**

With several terrorist attacks during last two years, including at Pathankot Airbase in Punjab and Uri Army Camp at Jammu and Kashmir in 2016, the threat India faces from terrorism has been highlighted again. The terrorist attack on an Indian army brigade headquarters in the border town of Uri in Jammu and Kashmir (J&K) on 18 September, 2016, which claimed the lives of 19 Indian soldiers, was the biggest psychological

3 Sumit Ganguly and Rahul Mukherji, *India Since 1980*, New York: Cambridge University Press, 2011, p. 139.

4 Pratap Bhanu Mehta, “Higher abdication”, *Indian Express*, 2 June, 2015.

5 Subrata K. Mitra, *Power, Protest and Participation: Local Elites and the Politics of Development in India*, New York: Routledge, 1992, p. 242.

6 “In, and out, of the ghetto”, *Indian Express*, 15 January, 2015.

and strategic blow to Indian security forces in the J&K. Although, Indian government carried out ‘surgical strikes’ against Pakistan’s terrorist launching pads across the Line of Control (LoC) on 29 September 2016, the counterattack has not deterred Pakistan-based terrorists from cross-border terrorism.<sup>7</sup>

President Pranab Mukherjee had fittingly likened terrorism to the fourth world war. According to him, “the war against terrorism is the fourth; and it is a world war because it can raise its evil head anywhere in the world. India has been on the frontlines of this war long before many others recognized its vicious depth or poisonous consequences.”<sup>8</sup> A major trend in contemporary terrorism is the rise of religious terrorism that has been the most lethal, resulting in highest death tolls both at domestic and at international levels. Increasingly sophisticated information and communication capacities of terrorist groups allow them to expand their audience, as well as amplify the message and demonstrative effects of their attacks. The evolution of organizational forms and the upgraded communication capacities of terrorist actors have affected their training and recruitment patterns. These have evolved from a more structured recruitment involving combat training to the more rapid and voluntary recruitment which frequently involves online radicalization of individuals or cells. These cells may have a direct link to broader terrorist networks, but may also join a broader movement without direct exposure.

Traditionally, a basic distinction was made between domestic terrorism and international terrorism. In practice, however, this distinction was never too strict. Systematic terrorist activity was rarely self-sufficient within national borders. In the twenty-first century, this distinction has eroded even further. Even terrorist groups whose political agenda remained confined to a certain political or national context increasingly internationalized their logistics, fund-raising, propaganda and even planning activities. Today there are few terrorist actors that rely on domestic resources alone.<sup>9</sup> For instance, a violent Islamist cell in India may have very limited direct operational direction or logistical support from the rest of the transnational Islamist movement. However, its terrorist activities will still be termed as international terrorism as long as they are guided by a Universalist and religious ideology and are carried out in reaction against perceived injustices to Muslims anywhere in the world. Likewise, Maoists groups engaged in armed conflicts in very remote locations, which have relied primarily on internal resources, have built ideological links with like-minded movements and received external support.

The partition of India on communal basis, the enduring tension between India and Pakistan, and Pakistan’s Islamic foreign policy have directly complicated the internal security situation in India. Persistent practice of divisive vote bank politics – pampering Muslims in order to get their votes without improving their socio-economic conditions – not only allowed Hindu right-wing to brand secularism as ‘pseudo secularism’ but also emboldened the Muslim right-wing to frustrate much needed reforms in the Muslim community. Therefore, the ‘questioning’ of secular nationalism coupled with the global rise of ‘political Islam’ has led to the emergence of religious extremism in many parts of the country. The cancerous growth of the *communal* virus has seriously threatened India’s internal security as religious extremists endanger social fabric and political stability of the country. The Hindu majority have so far abstained from supporting those anti-secular and anti-minority groups who want to violently transform India into a Hindu nation. But the involvement of Hindu extremist groups in some bomb blasts—Malegaon, the Samjhauta Express, and the Mecca Masjid— is very serious and unfortunate. These terrorist attacks were ostensibly launched by Hindu extremists in response to Jihadi terrorism and what they perceived as the state’s failure to combat it.

7 R K Arora and Vinay Kaura, “‘Surgical Strikes’ Beginning of a New Era in Counter-Terrorism in Kashmir?”, *CPCS Occasional Paper 10*, Jaipur: Centre for Peace and Conflict Studies, October 2016.

8 PTI, “Fight against terrorism is 4th World War: Pranab”, *The Hindu*, 25 July, 2012; *Indian Express*, 25 July, 2012.

9 More on major trends in terrorism, see Ekaterina Stepanova, “Terrorism and extremism” in Graeme P. Herd (ed.), *Great Powers and Strategic Stability in the 21st Century Competing visions of world order*, Routledge, 2010.

It would be relevant to summarize the emergence of Jihadi terror in Indian sub-continent. After the end of Afghan Jihad, many of the Mujahideen, who believed that they had forced the mighty USSR to leave Afghanistan, came back to Pakistan and became an integral part of the religious organizations. Many others decided to enter Kashmir and start an insurgency in the state. It was not mere coincidence that the Kashmir terrorism/insurgency began in the aftermath of the Soviet withdrawal from Afghanistan in 1989. The vicious indoctrination and training of Kashmiri youths, however, had begun much earlier. The terrorist violence unleashed by terrorists groups posed multiple threats to India's security – internal and external.

Before the 9/11 attacks on the USA, Pakistan had a number of militant and terrorist organizations active in Kashmir under the banner of *United Jihad Council* (UJC). It comprised of Harkat-ul-Mujahideen (HuM), Jaish-e-Muhammad (JeM), Lashkar-e-Tayiba (LeT), Hizbul-Mujahideen (HM), Al Badar, Harkat ul-Ansar (HuA). *Even after September 11 terror attacks, support of Jihadi terrorism by Pakistan failed to produce severe criticism* by the West. Consequently, Pakistan has continued its covert operations in Kashmir and other parts of the country, whose primary aim is to create an insurgent/terrorist capability across India. The nature and scope of Pakistan-supported terrorism has undergone a radical shift in the last decade, yet the primary objective of Pakistan – destabilization of India – remains the same.

Indian Parliament attack in December 2001, Mumbai attack in November 2008, Pathankot airbase attack in January 2016, and Uri army camp attack in September 2016 were planned and executed by Pakistani terror groups with the sole intention of causing social, economic, psychological and political chaos in India. Pakistani intelligence agency, the Inter Services Intelligence (ISI) has played a crucial role in creating and sustaining Jihadi organizations. After first targeting the border areas in India, Jihadi organizations, with moral and material support from the ISI, have now spread deep inside the country. These bigoted and fanatical elements are not only indulging in insidious anti-Indian activities, but are spreading the virus of Jihad among the Muslim youth of India.

The Indian Mujahideen (IM), the most lethal home-grown terror group, was also formed with the connivance of Pakistan's ISI and LeT.<sup>10</sup> The discontented Muslim youth from India were smuggled into Pakistan via Nepal, trained in the UAE and sent back to India to carry out terror attacks. Because they were Indian citizens, it was easier for them to penetrate deeper into the system without arousing much suspicion.<sup>11</sup> The first so-called 'manifesto' of IM was released in 2007 shortly after it bombed courthouses in several cities of Uttar Pradesh (UP). The aim of all IM attacks has been to cause maximum havoc, killing hundreds of innocent people. After the UP terror attacks, the IM terrorized Indians with a string of bombings: in July 2008 in Ahmedabad, in 2010 on the German Bakery in Pune, a triple bombing in Mumbai in 2011 etc.<sup>12</sup>

Liberal variant of Islam as practiced in India is under constant attack both by the radicalized Deobandi Schools of Pakistan and the Wahabi-Salafi school of Saudi Arabia. Speaking at a security conference in Jaipur in April 2014, the then Governor of Rajasthan, Margaret Alva, had clearly said that the Bhatkal village in Karnataka and some other coastal areas of Kerala have become a breeding ground for illegal trade and terrorist organizations with funds pouring in from Saudi Arabia.<sup>13</sup>

The problem posed by the rise of radical Islam has avoided a solution because it has several conflicting components. One such element involves confrontation between Sunni Saudi Arabia and Shia

10 PTI, "ISI closely connected with Indian Mujahideen operatives: NIA", *The Hindu*, October 2, 2014; Praveen Swami, "The Indian Mujahidin and Lashkar-i-Tayyiba's transnational networks", Combating Terrorism Center, June 15, 2009, <https://www.ctc.usma.edu/posts/the-indian-mujahidin-and-lashkar-i-tayyiba's-transnational-networks>

11 Barkha Dutt, *This Unquiet Land: Stories from India's Fault lines*, New Delhi: Aleph Book Company, 2016.

12 Aaron Mannes, R K Raghavan, "Penetrating the web of terror networks", *The Hindu*,

13 "Multi-dimensional threats challenge Indian security", Event Reports, April 2014, [www.orfonline.org/research/multi-dimensional-threats-challenge-indian-security/](http://www.orfonline.org/research/multi-dimensional-threats-challenge-indian-security/)

Iran. Unless the two learn to live peacefully, the problem is likely to deepen further. Emergence of the Islamic State (ISIS) or Daesh has underlined that an extremist violent movement can also assume a territorial form, and, at the same time, blur territorial and political boundaries in its outreach. The global war against the ISIS is also acquiring a Cold War dimension with the Russians committed to defending the regime of Syrian President Bashar al-Assad while the Western world is keen to force him out of power. Resistance to the Islamic State by Kurdish militias is viewed with suspicion by Turkey and Iraq as they fear that this could have an undesirable impact on the restive Kurd populations in their own countries.<sup>14</sup>

The incidents of some Indian Muslims going to Iraq and Syria to fight for or against the Islamic State (ISIS) have made the government agencies alarmed. Disturbingly, the profile of young men who are becoming susceptible to the ISIS is contrary to popular assumptions; they are young, educated and urban and they have not studied at the traditional Islamic schools. Speaking at a security conference at Jaipur in April 2014, noted scholar Wilson John, had mentioned some of the problems associated with racial profiling of terrorists as a counter-terrorism mechanism as it contained biases on the basis of religion, ethnicity and socio-economic background. He pointed out the case of David Headley to highlight the limitations of racial profiling.<sup>15</sup>

In an affidavit filed before the Delhi High Court in September 2015, Union home ministry said that “allowing any sect to take part in the conflict in Iraq or Syria would have repercussions on other sects in India. This could directly result in sectarian conflict within India, which is not in the interest of the nation...Allowing an Indian to go to another country to take part in a conflict would lead to allegations that the Indian government is promoting terrorism in other countries”.<sup>16</sup> Quoting an intelligence officer in her latest book, journalist Barkha Dutt has attempted to find an answer to the puzzle as to “why all these years, even though Afghanistan is much closer to us not a single Indian Muslim went to join the “jihad” there. Iraq and Syria are someone else’s war; so why are people going at all?” According to the intelligence officer quoted by Dutt, the primary reason was Indian Muslim’s physical disconnect with global Ummah as well as the worldview of India-based jihadists being largely shaped by domestic grievances, but in an increasingly polarized environment, where unmonitored access to internet has opened floodgates of jihadist propaganda to young and impressionable minds, India has not been able to build an effective counter-radicalization strategy.<sup>17</sup>

Even after some institutional overhauling of security apparatus following Mumbai terror attack in 2008, India continues to face serious jihadist threat. According to noted scholar Stephen Tankel, the jihadist movement in India is a loosely organized indigenous terrorist network that constitutes an “internal security issue with an external dimension.” He argues that Indian jihadist movement “is more lethal and more resilient than it otherwise would have been, thanks to external support from the Pakistani state and Pakistan- and Bangladesh-based militant groups.”<sup>18</sup>

### **Ethnic Identity**

People don’t have single identities, usually they have multiple identities. Primarily there are two kinds of identities: ascribed and achieved. Ascribed identity is one that cannot be refused by people, such as

14 Tariq Mahmud, “A backlash of Western policies and misadventures”, *Express Tribune*, 28 December, 2015, <http://tribune.com.pk/story/1017707/a-backlash-of-western-policies-and-misadventures/>

15 “Multi-dimensional threats challenge Indian security”, Event Reports, April 2014, [www.orfonline.org/research/multi-dimensional-threats-challenge-indian-security/](http://www.orfonline.org/research/multi-dimensional-threats-challenge-indian-security/)

16 Utkarsh Anand, “Home Ministry tells Delhi High Court: Fighting IS can lead to ‘sectarian’ conflict in India”, *Indian Express*, 17 September, 2015.

17 Barkha Dutt, *This Unquiet Land: Stories from India’s Fault lines*, New Delhi: Aleph Book Company, 2016.

18 Stephen Tankel, *Jihadist Violence: The Indian Threat*, Woodrow Wilson International Center for Scholars, Washington, DC, December 2013.

race, language, ethnic, religion. Achieved identity is one that is assumed by choice or deliberate action, such as social class or position, citizenship, political orientation, and economic status. A great majority of contemporary states are ethnically diverse and many of them are deeply divided along ethnic lines. If the governments of such states attempt to establish the dominant ethnic character over the polity, it proves problematic in terms of both the long-term stability of the polity and the democratic nature of its institutions. Moreover, the search for identity by different ethnic groups adds another tricky dimension to the domestic politics of such states.

Conflict over identity occurs when communities in a society are not able to share their identities together. As the minority ethnic groups feel politically powerless, having no influence on election results, coalition formation and government policy, and there is an almost complete overlap of the socio-economic and political status at the bottom of society and politics, the search for identity turns highly combustible and dangerous. It can be an identity conflict between different ethnic groups of race, language, religion, or identity conflict based on regionalism and ethno-nationalism.

Indian populations living in border areas tend to share a common ethnic and religious connection with populations in neighbouring countries. The broad territorial division of ethnic groups within India and the strength of regional ethnic identities ensure that the socio-political tensions and conflicts resulting from them are a major source of instability. As a consequence of this fact, India's many ethnic and religious conflicts are generally characterized by a blurred demarcation between its internal and external sources. These ethno-religious conflicts not only disturb India's overall stability, but very often engulf their neighbours.

Indian policy towards the adjoining countries has to be attentive to the preferences of domestic actors in bordering regions. This has been evinced by the sustained and vociferous support of the Tamil people and the Tamil Nadu government to the separatist movement of Tamils in Sri Lanka till the early 1990s, a fact that caused the Indian government to be heavily and sometimes unhappily involved in the ongoing conflict at various times, to the point of acquiescing in the armed tactics of the LTTE, launching a disastrous peacekeeping mission in Sri Lanka, and refusing military aid to the Sri Lankan army. In recent times, widespread sympathy in Indian border regions and Indian politicians' support for the Madheshi cause has strained India's relations with Nepal.

## Insurgencies

Due to its vast size and heterogeneous society and polity, India has been the subject of various conflicts between sub-national regions and the central government. The most significant axis of conflict for decades has been that between the Indian state and political movements demanding varying degrees of autonomy, including full independence. The creation of different ethnicity-based states has met some of the regional aspirations, but this could not compensate for deep imbalances in economic development. Scholars attribute this to the failure of the Indian state to ensure substantive democracy and equitable development for large section society. This has resulted in the discrediting of state-sponsored nationalism and, inter alia, the rise of movements aimed at establishing separate sovereign status from the Union.<sup>19</sup> The history of modern India is replete with such movements, many of which are still in progress.

Movements in border areas are particularly problematic because they become flashpoints with neighbouring countries, mainly due to three reasons. First, secessionist movements, especially armed movements, are likely to use the territories of adjacent countries to stage their attacks on the Indian state. This has negative consequences for the security of India's neighbours, and makes India diplomatically

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19 T. V. Paul (ed.), *South Asia's Weak States: Understanding the Regional Insecurity Predicament*, p. 154.

vulnerable to allegations of not doing enough to prevent its domestic conflicts from destabilizing the border regions of neighbouring countries. Second, and more importantly, the cross-border activities of secessionists create obstacles to neutralizing these movements. Third, secessionist movements allow neighbouring countries with an interest in destabilizing India to interfere in its internal affairs in an adverse manner.

Recently, Kashmir has been facing widespread unrest since the elimination of a Hizbul Mujahideen 'commander' in July 2016. The reasons for bloodshed, violence and disorder are multiple. Ranging from psychological disenchantment of Kashmiri people, to unabated interference by Pakistan, to lack of meaningful political dialogue for resolving the long-standing dispute, Kashmir issue cannot be treated as a law and order alone. Despite fighting the insurgency for almost three decades, India has not learnt much on how to deal with Kashmir. With law and order in shambles, and government unable to respond to the challenge in a coordinated way, the Kashmir valley is on the verge of another full-blown insurgency.<sup>20</sup> Local element in Kashmir insurgency continues to be a matter of great concern. This flow has been attributed to a range of factors, including the aggressive recruiting campaigns orchestrated by various regional and transnational Jihadist groups and the ease with which terrorists from Pakistan can access this region.

North-Eastern insurgencies have proved to be the most persistent and intractable. India's north-east, surrounded by four neighbouring countries, provide ideal terrain for guerrilla warfare. The region is home to diverse tribal groups and they speak different languages. This ethnically diverse population spill over into various states and across international borders. Prolonged neglect and distance from the mainland has led to a sense of alienation; a fertile situation for the onset of insurgency. The sense of alienation among the people is largely because of extortions, corruption and mal-administration in most of north-eastern states. Developmental funds are siphoned off by bureaucrat-politician-insurgent nexus. V. R. Nayar, former governor of Manipur, echoes this feeling: "Insurgency in the North East has become an industry in which the main motive is profit for those in power, both through the ballot and bullet".<sup>21</sup>

The Naga insurgency, the oldest and most powerful insurgency in India, continues to challenge the policy makers in New Delhi as a final solution is yet to be found. Naga insurgents are divided into two main groups: the National Socialist Council of Nagaland or NSCN-IM led by Isaac Swu and T. Muivah and NSCN-K led by SS Khaplang. The signing of the 'Framework Agreement' between the central government and the NSCN-IM in August 2015 had brought flicker of hope amongst the people. But the contents of the framework agreement are not in the public domain, leading to confusion and differing perceptions amongst the various stakeholders. There still exists several unresolved issues, including the integration of contiguous Naga inhabited areas of Manipur, Assam and Arunachal Pradesh, the demand for a separate Frontier State by the tribes of Eastern Nagaland etc, which could severely impede the ongoing peace process.<sup>22</sup> Moreover, not willing to dilute the original demands of sovereignty, NSCN-K is not part of the peace process.

As governance in much of India "is conspicuous by its absence or is experienced only in its most neglectful, callous, and oppressive manifestations"<sup>23</sup>, the poor, marginalized and exploited sections of society are particularly susceptible to Left-wing rhetoric. Renowned journalist Sudeep Chakravarti feels that "Maoist rebels mirror India's own failings as a nation. Their presence in an area that equals a third

20 R. K. Arora, Vinay Kaura, "Emerging Challenges in Kashmir: The Way Forward", *CPCS Special Report*, Issue No. 101, Jaipur: Centre for Peace and Conflict Studies, August 2016.

21 V. K. Nayar, "Moving away from Realpolitik", *Seminar* 479, July 1999.

22 Pradeep Singh Chhonkar, "Naga 'Framework Agreement' and Its Aftermath", *IDSAC Comment*, September 01, 2016, [http://idsa.in/idsacomment/naga-framework-agreementand-its-aftermath\\_pschhonkar\\_010916](http://idsa.in/idsacomment/naga-framework-agreementand-its-aftermath_pschhonkar_010916)

23 Ajai Sahni, "India's Internal Security Challenges", *NBR Special Report 39*, National Bureau of Asian Research, May 2012, p.3.

of India proves abdication by the state<sup>24</sup>. Although, presently the Naxal movement seems to be enjoying more membership than it did a decade ago, there is no denying the fact that the majority of these members are motivated more by localized socio-economic issues than any long-term ideological or intellectual commitments. Nevertheless, their activities pose a grave danger to security in those remote areas where the writ of the government is questionable. The threat to internal security posed by Naxalism can become considerably higher if it spreads its tentacles outside its present confines in the rural areas of eastern India. Moreover, the Naxal movement can directly challenge India's internal security and cohesion if it exploits urban poverty to make inroads in nation's cities. A mix of force-centric and development-oriented approach by the government has not been able to curtail the capacity of Naxals to carry out periodic attacks on the security forces.<sup>25</sup> Whether the Maoist insurgency should be seen as being driven by 'revolutionary romanticism', or whether it should be treated primarily as a security problem or rather as a development problem, are critical questions on which Indians remain divided.

## Migration

Human history is the history of migration. In the world of nation-states, however, the movement of people between states takes place in the context of sovereignty, which entitles the state not only to exercise exclusive jurisdiction over its territory but also to decide who shall be allowed to enter and who shall be refused admission? Irregular or illegal migration can legitimately be viewed as undermining the exercise of state sovereignty, and failing to control migration risks undermining public confidence in the government. In recent years, international migration has occupied the forefront of the security agendas of several states, particularly in Europe and North America. The perception of immigration as a threat to security has developed alongside the rapid increase in the number of immigrants worldwide. For example, more than millions of people have arrived in Europe from the turbulent West Asia and Central Asia, mostly from war-torn Syria.

South Asia is a region of pervasive homelessness, migration, and the mass movement of populations necessitated by political disturbances, ethnic and communal violence, ecological degradation, and structural adjustment policies.<sup>26</sup> The cross-border movement of large populations presents a conceptually distinct challenge because it involves the large-scale migration of individuals into Indian territory, transforming an international affair into one with considerable domestic ramifications. The political participation of wave after wave of migrants into West Bengal and the North-East region has posed continual challenges to the stability of India's political system and especially to the conduct of politics within this region. Migration has influenced the local party organizations, conduct of elections, patterns of voting and recruitment of political leaders.

Thousands of poor immigrants from Nepal and Bangladesh cross the border into India looking for work. They lead precarious existences, on low-paying exploitative jobs, including sex work, while Bangladeshis additionally live with the imminent threat of deportation. The mass migration of such populations results in the creation of new ethnic groups in the border regions of India, with the potential of creating security problems. The fact that Bangladeshi immigrants are a source of ethno-communal tension was confirmed by violence in lower Assam in 2012 which claimed more than 70 lives and led to internal displacement of nearly 400,000 people. The serious outbreak of violence between Muslims and Bodos was ethnic strife, communal riots and a turf war over land all rolled into one.

24 Sudeep Chakravarti, "No End in Sight," *Seminar* 605, January 2010.

25 Rana Banerji, "Security threats to India in 2015," *The Hindu*, January 26, 2015.

26 Nivedita Menon and Aditya Nigam, *Power and Contestation: India Since 1989*, p. 175.

The influx of Bangladeshis is likely to continue because the politics of 'vote bank' has made the task of identification and deportation of illegal immigrants exceedingly complicated.

## **CONCLUSION**

Internal security is an essential component of national security and its importance cannot be over emphasized to ensure growth of a fast emerging economy like India. The primary causes of several challenges to India's domestic stability over last few decades have been its social heterogeneity and political fragmentation, with growing divide between the rich and the poor adding fuel to the fire. Through India's peculiar political process, they have also complicated the management of India's domestic security environment. Governance needs to focus on addressing peoples' needs and aspirations.

Bigger challenges to India security in the present century are oriented toward internal conflicts, as well as involving non-state actors, terrorism and insurgency movements. Organized criminal syndicates and terrorists continue to pose a constant challenge to India's security. Organized crime is growing in influence and scope as criminal groups become increasingly entrenched in the globalized economy. Terrorism and insurgency continue to challenge the policy makers. Phenomenal advancement in communication and transportation technologies has led to decline in governmental controls over the transnational flow of goods, services and money as illicit transportation of arms, drugs, and people is assuming alarming proportions.

These are times of turmoil as we move deeper into the twenty-first century. No amount of discussion will translate automatically into result-oriented policy and firm action, with the existing lacunae left unaddressed. While the frequency and severity of internal security threats increases; greater communication between the centre and the states, coordination among various central and state security agencies is the way ahead. Expediting police reforms, enhancing response capabilities and equipment modernization must become the key components of India's strategy to cope with these threats. Politicians, bureaucrats, police professionals, academia, media and all agencies involved in the management of internal security must work in close coordination so that they complement each other's efforts.



# Terrorism –Its Impact on International Business

Dr. Manu Chaudhary  
Manoj Kumar, BSF



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## Abstract

Terrorism is defined as a way to frighten people in an area in order to achieve political goal. It has been part of society throughout the history ever since. In modern world the motive behind the terrorism have become even more complicated not only it is targeting citizens but also the factors which affects daily life and mechanism of state machinery, and the instruments which affects economy and economic functions and reputation are new targets of terrorism. The 9/11 attack targeted symbols of American military and economic might by terrorists by attacking Pentagon and World Trade Center therewith. Terrorism has directly victimized country's ability to attract Foreign Direct Investment and reputation This paper examines the impact of terrorism on International business by various sectors such as Tourism, Aviation, Hospitality industry, Finance, Foreign Direct Investment and Insurance.

## Key words

Terrorism, Tourism, Aviation, Hospitality Industry, Foreign Direct Investment, International Business, Insurance.

## Introduction

**T**errorism is not new phenomenon as it has been a part of society throughout history in one form or the other. Europe, Asia and United States as well as other continents and countries have a long history of terrorist attacks. The U.S. Department of State defines terrorism to be a “*premeditated politically-motivated violence perpetrated against non-combatant targets by sub-national groups or clandestine agents, usually intended to influence an audience*”. [1]. Although there is no universally accepted definition of terrorism the most common definition of terrorism is used as, and which includes the following: [2]

It is the use of violence or threat of violence in order to purport a political, religious, or ideological change.

It can only be committed by non-state actors or undercover personnel serving on the behalf of their respective governments.

It reaches more than the immediate target victims and is also directed at targets consisting of a larger spectrum of society.

It is both *mala prohibita* (i.e., crime that is made illegal by legislation) and *mala in se* (i.e., crime that is inherently immoral or wrong).

As far definition in Indian context is concerned, The Supreme Court of India adopted Alex P. Schmid's definition of terrorism in a 2003 ruling (*Madan Singh vs. State of Bihar*), "defining acts of terrorism veritably as 'peacetime equivalents of war crimes.'" [3] The now lapsed Terrorist and Disruptive Activities (Prevention) Act specified the following definition of terrorism:

"Whoever with intent to overawe the Government as by law established or to strike terror in the people or any section of the people or to alienate any section of the people or to adversely affect the harmony amongst different sections of the people does any act or thing by using bombs, dynamite or other explosive substances or inflammable substances or lethal weapons or poisons or noxious gases or other chemicals or by any other substances (whether biological or otherwise) of a hazardous nature in such a manner as to cause, or as is likely to cause, death of, or injuries to, any person or persons or loss of, or damage to, or destruction of, property or disruption of any supplies or services essential to the life of the community, or detains any person and threatens to kill or injure such person in order to compel the Government or any other person to do or abstain from doing any act, commits a terrorist act."

On September 11, 2001 the world saw the unthinkable, terrifying truth of globalized terrorism. This brought a new reality that traditional, political and financial risk assessment is not sufficient to analyze the international business environment. The risk management today must include the study of international terrorism and its impact on financial, macro and micro decision, investment decisions for firms and business entities. September 11 attack has made visible that terrorism has to be considered as a major continuous challenge to International Business Environment.

## **Terrorism and International Business-Analysis**

Aim of the paper **the primary level, the micro level and macro level of business** is distinguished and defined. The '**primary level**' is research conducted at individual person level and firm. It also includes the firms operation located abroad and deals with threatened or actual damages or destruction caused to physical plant, property or equipment and/or injury or death of a person. This level of terrorist act directly affects an individual or firm to function efficiently. So for having detailed knowledge about terrorism affects an individual and the firm, the analysis of this level is essential. At '**micro level**' the investigation of terrorism with regard to its effect on specific region, Industries or levels in international value chains are analyzed and investigated. The next level '**macro level**' refers the effect of terrorist attack on global environment. It includes variables like reactions by supranational organizations such as United Nations, world economy, demand of goods and services.

## **Terrorism and Level of Uncertainty in International Business Environment**

Terrorism results in increase in levels of uncertainty in Business Environment. Supplies of inputs to organization, services are affected due to such events. New policies are made by the government to counter the terrorism which alters the business environment. Psychological effects due to terrorist activity lead to fall in nation's stock market as stock market is very sensitive and is directly affected by sentiments of people. The International Relations also suffer thereby effecting Business Environment. Interestingly, from the very basis of such analyses, scholars and practitioners have recognized that the high perception of threat and uncertainty caused by terrorism may lead not only to loss but also to the creation of new business opportunities. <sup>[4]</sup>

## Terrorism and Political Risk

**Political risk** is the risk of financial, market or personnel losses because of political decisions or disruptions, also known as “geopolitical risk.” [5] .Political risk focuses on risks faced by investors that are principally the result of forces external to the industry and which involves some sort of government action or, occasionally, inaction. [6] When we talk of political risk, it effects within nation or we can say national boundaries but terrorism effects at macro level due to ripple effect. Political risk takes time to occur but terrorist strikes all of a sudden or unexpectedly. Political risk tends to occur with degree of certainty or objective certainty and can therefore, be predicted with considerable accuracy. [7] In contrast terrorism is unpredictable as it occurs unexpectedly and even intelligence agencies can’t predict them accurately. Terrorist attack can take place anywhere and at anytime whether it is Bali or World Trade Center at New York.

## Impact of Terrorism on International Business

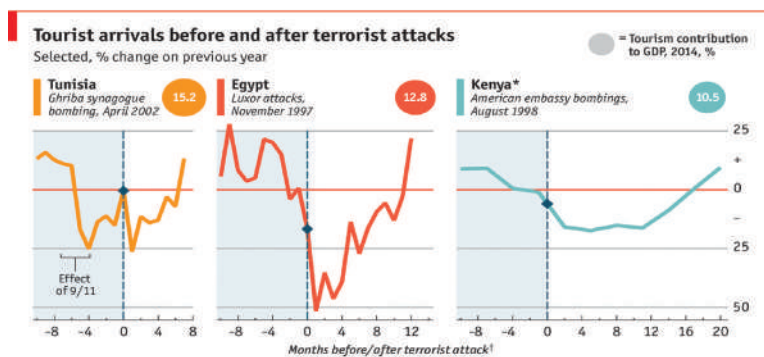
Terrorism is a demanding challenge as it is unpredictable and has direct and indirect impacts on international business. For analyzing the impact of terrorism various sectors are discussed in the paper segment wise which affects the International Business and Economy.

## Tourism and Terrorism

Terrorism risk levels in a region and the number of tourists travelling to that region are inversely related. “Tourism is a straight- forward concept and may be defined as a service based industry comprised of several elements including transportation, accommodation, foods and beverages, tours and merchandising” [8] International tourism is a major source of Foreign Exchange and it is one of the world’s largest industries and an important economic sector. Economic development of many countries depend on tourism and so when such attacks takes place it leads to economic setback Indonesia is one such example which suffered economically after attack at Kuta Beach, Bali. People avoided any travel within the country and this all happened within hours of September 11 attacks. Tourists avoid places prone to terrorist attack which in turn affects Foreign Direct Investment (FDI). Travellers often suffer from tighter security in borders, ports and airports.

Visa regulations often heightened after terrorists have attacked a country. Many tourists have to pay higher costs of acquiring visas and have to undergo intrusive body scans and lengthy procedures in carrying liquids and electronic gadgets. [9]

Figure: 1



Source: economist.com

The Figure:1 represents the fall in number of tourists visiting three countries namely Tunisia, Egypt and Kenya, all the three countries experienced continuous decline in number of tourists after terrorists attacks and have several months to recover to normal position. In international tourism, potential travelers to a country may be dissuaded from visiting when the probability of victimization is high. [10] According to Maslow's theory of "Hierarchy of Needs," Safety is one of the fundamental needs of every human being, (Figure: 2) and so people avoid places of high risks.

Figure: 2 (Maslow's hierarchy of need)

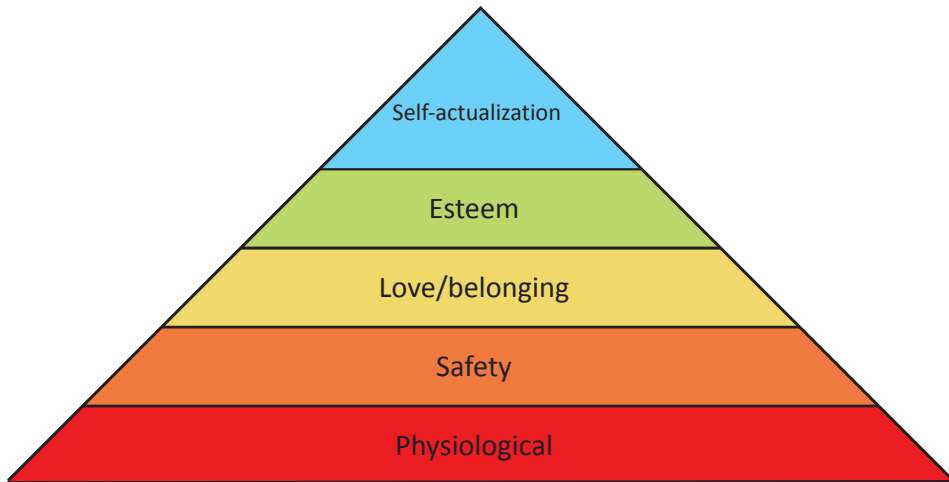
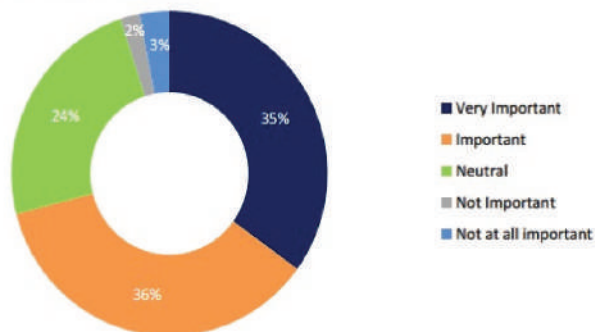


Figure:3

When choosing which country to visit for your holiday abroad in 2015, how important is a country you know that is safe from a terror attack?



Source: Canadian Survey, 2015. Base 200 UK based respondents.

Economic development of many countries depends upon tourism sector. Tourism is also related with business because when tourists visit they bring business along with them. Terrorist activities hurt tourism very badly as tourists stop visiting particular place due to insecurity. Violence in Kashmir and North East in India stopped tourists to visit these places. Media reports have claimed that thousands of tourists were fleeing violence-hit Kashmir and bookings were being cancelled due to unrest and consequent curfew in the Valley following the killing of Hizbul

commander Burhan Wani in an encounter on July 8. [11] Tourism industry in Turkey is also affected by terrorism as country has been under attack by regional terrorism in past few years. Islamic state of Iraq and the Levant (ISIL) and Kurdish militant group, PKK and TAK killed hundreds last year in attacks. Recently tourism is one of the hardest hit sectors in turkey and this is all due to political instability. Due to these attacks Brits in turkey are advised to avoid public places. The Foreign Office is advising Britons in Turkey to stay indoors, avoid public places, especially demonstrations, and remain vigilant. [12]

## Aviation and Terrorism

The aviation industry encapsulates the development, operation and management of aircraft. An airline is a company that provides air transport services for travelling passengers and freight. Airlines lease or own their aircraft with which to supply these services and may form partnerships or alliances with other airlines for mutual benefit [13]. In the growth of the global economy aviation acts as a helping fuel as it brings together the business colleagues. The world's demands for aviation is still growing as people can move anywhere in least possible time say within 24 hours to any part of globe. Terrorist attack anywhere in the world effect can negatively affect the air travel and this will affect negatively on global economy. Policies of government for security will result in expensive cost of operation and if government intervenes, it will lead unexpected new international competition in international travel industry. Globalization is also disturbed by terrorist attacks as there are numerous people travelling everyday and they can be easily be targeted. September 11, 2001 attack was so horrific that it affected both tourism and travel Industry. The Figure: 4 shows that there was a sudden reduction of air passenger's traffic after September 11, 2001 attack. Peoples avoided business trips within the United States itself and this adversely affects the economy of the country. Drop in travel is directly related to drop in business. Multinational companies cancelled all of their business meetings with customers and partners in order avoid travelling. As we are now living in the world of globalization and so business world also need travelling.

Figure: 4



Source: Passengers Boarding Flight in the US, Millions (Bureau of Transportation Statistics)

There was a sudden economic setback suffered by aviation Industry in 2001 as the US air travel industry lost 5 billion US dollars. [14] The United States passed the Aviation and Transportation Security act 2001(U.S. Public Law 107-71) in order to safeguard the industry. “This act is comprehensive approach to

increase aviation security. The objective of act is to create, develop and streamline security procedures and protocols that radically reduce the chances of, any security breach or violation". [15] Its implementation resulted in billion dollars cost which was indirectly imposed on airline industry and cost of operations in turn resulted into rising cost of airlines since 2001.

## Hospitality and Terrorism

Terrorists now target hospitality and tourist locations as it has direct impact on human lives and economy; also they get the attention worldwide. Terrorism has shaken the hospitality and tourism industry of both developed and developing country. [16] As we know hospitality of many countries depend upon tourism so by terrorist activity there is direct impact on the economy of the country.

Great example of economic impact in Indian hospitality industry occurred 26 November 2008 at Taj hotel Mumbai India .Following was the main reasons to choose Taj Mumbai for attack, Since Indian tourism industry was growing faster which was really helping in Indian economic.

- Taj is a landmark of Mumbai.
- Taj is having majority of business customers from all around the world coming to India, They wanted to destroy countries business relationship with India.
- They wanted to kill 5000 people in the hotel to effect economy.

The week after the 26/11 attacks in Mumbai saw thousands of hotel bookings cancelled all over India. [17]

Another example is September 11, 2001 attacks on World Trade Center and Pentagon. The people avoided trips due to perceived risk by the terrorist attacks. The drop in occupancy rate at American hotels was immediate following September 11 and continued over the following five months. [18]

## Foreign Direct Investment and Terrorism

In developing countries FDI is vital for development. It is considered to be a major source of foreign capital and technology to support the economic growth. Terrorist attack lowers the amount of foreign investment which affects the economic development of a particular country. If a country is famous for terrorist attack repeatedly, then it will negatively affect the investment decision by a foreign firm. Country prone to terrorist attacks will attract low levels of FDI because no country would like to invest in countries like Egypt, Turkey, and Syria due to political unrest.

Terrorism around the world is a problem for foreign direct investment (FDI). For example, a multinational corporation based in the U.S. may find a location in India to be attractive for setting up a plant because of the abundance of cheap and well-trained labour there. However, if that area is also a potential location for insurgency and terrorism, the multinational will have to weigh the benefits from lower wage costs against the possibility of loss of plant, manpower and equipment from terrorist attacks. On aggregate, a higher incidence of terrorism (as perceived by potential investors) will tend to reduce their willingness to invest in a terrorism-infested area. [19]

High level of terrorism lowers the level of FDI as people will avoid the risk. Countries facing continuous threat of terrorism may incur economic costs. This cost results in reduced investment and economic growth.

If individual companies have to provide their own security for their operations in India that would certainly discourage them from investing. Companies would ask themselves: how can we run our factories and industrial complexes in India if we have to protect them ourselves? Production would be

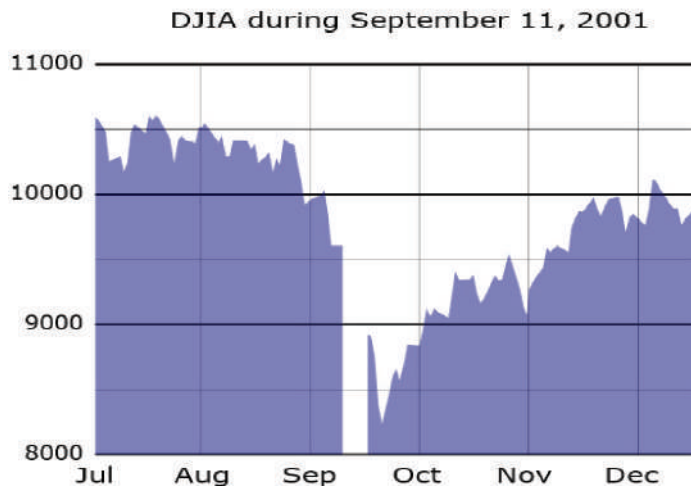
affected if companies had to put in place special security measures, which may restrict the opening hours of a factory. [20]

## Financial Sector and Terrorism

Global as well as national economy is victimized by terrorist attacks. It has great impact on financial markets directly or indirectly. The attack on World Trade Center is a good example to depict this impact. The aim of September 11, 2001 attack on World Trade Center was to disturb international financial system and destabilize US economy in particular.

The NYSE and NADAQ remained closed between 11 to 12 September due to attack on world trade center. Due the horrific attack there was a huge loss of human life and both North and South tower were collapsed badly. Many trading companies, brokerage companies and financial companies were having their office in world trade so after its collapsing they stopped functioning Global market dropped sharply setting a record of biggest loss for one trading day .There was decline of 7.1% on the first day NYSE trading. Billions of money was lost in insurance itself. The stock exchanges including London stock Exchange were also closed down in fear. Trading on the United States bond market also ceased; the leading government bond trader, Cantor Fitzgerald, was based in the World Trade Center. Gold prices spiked upwards, from \$215.50 to \$287 an ounce in London trading. [21] The New York Mercantile Exchange was also closed for a week after the attacks. Oil prices also spiked upward. [22] Gas prices in the United States also briefly shot up, though the spike in prices lasted only about one week. [23] There was estimated loss of \$1.4 trillion within five days of trading, biggest loss in NYSE history.

**Figure: 5** Stock exchanges closed between September 10, 2001 and September 17, 2001. After the initial panic, the DJIA (Dow Jones Industrial Average) quickly rose for only a slight drop.



Source: [www.marketwatch.com/investing/index/dji](http://www.marketwatch.com/investing/index/dji)

## Insurance and Terrorism

Terrorist attacks leads to increase in insurance claims. The September 11 attack resulted in huge loss of property and life. There was estimated claim of \$40 billion, making it largest insured claim in history.

The risk caused by terrorism was new and the insurance companies were not having prior experience or we may say negligible experience. As a result, only a few insurers are offering limited, restricted, and expensive coverage for terrorism. [24] Other example is of terrorist attack occurred 26 November 2008 at Taj hotel Mumbai India .In the year 2008-09 , they had to make good claims amounting to a whopping Rs 500.09 crore after some of the city's more prominent hotels were attacked by Kasab and nine terrorists during the 26/11 attack.[25] We can assume that after every major attack as far as claims are concerned the insurance companies suffer but subsequent to attack more and more people think of themselves to be covered by insurance, in that period following terrorist attack insurance business is bound to rise.

## Conclusion

This study depicts the relation of terrorism with various sectors of national and international economy and business. The result found was that Tourism, Aviation, Hospitality, FDI; Finance has inversely related with terrorism while insurance claim is directly related with terrorism. Insurance claim increases with increase of terrorism for a particular time period followed by a boom period. But still there are some industry and services which has observed growth by terrorism like manufacturing related to security and surveillance devices and security industry. The research and development in these industries also received fillip due to security related issues and the prospective business therewith. But still it is safe to assume that, due to unpredictability "Terrorism" within the International Business domain has proven to be a negative impact factor for business and international economy.

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# Fighting the Enemy Within: Combating Stress Among the Indian Paramilitary Forces

Angela Kelling, Dr. Mrinal Mugdh Varma, Dr. Sandeep  
Vohra, Dr. Shanta Goswami, Divyani Khurana



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## Abstract

Those suffering from mental health issues may have problems receiving treatment because of barriers in access or social stigma. The purpose of this paper is to examine the prevalence of stress among officers and staff of one of India's federal paramilitary forces by assessing their mental, emotional, and behavioural health using a computer-based self-assessment screening tool. In the current study, a sample of paramilitary personnel in India completed a questionnaire that collected data on human characteristics, stressors, and stress-related symptoms in various aspects of life. The results were used to develop a model of causes of and possible interventions for stress in this population. The large percentage of paramilitary suffering from some form of stress suggests an acute need for a system that closes the gaps in access to mental, emotional, and behavioural healthcare by using appropriate screening to provide referrals, interventions, and support services. A system such as this would reduce stress, prevent burnout, enhance productivity, and improve outcomes by helping paramilitary personnel reach optimal mental, emotional, and behavioural health.

## Key words

Stress, Behavioural Health, Mental Health, Paramilitary Forces, India

## Introduction

The current study examines stress and mental, behavioural and emotional health in members of an Indian Federal paramilitary force. Studying these issues across many cultures is essential to understand stress in federal law enforcement officers throughout the world (Malach-Pines and Keinan, 2006). The inaccessibility of behavioural health services in India (WHO, 2001) is a critical issue because early detection is crucial for better outcomes for the individual and organization (Shah and Jenkis, 2000). Therefore, the current study examines data collected from Stressometer, a self-administered software-based screening tool that uses technology to make behavioural health assessment widely available and subsequently to bridge the gap in behavioural health treatment. This survey may be the first software-based screening study in the world focused on detecting levels of stress and its causes among individuals serving in paramilitary forces.

## **Law Enforcement Stress**

At the crossroads between police and military is a member of the paramilitary or federal law enforcement forces. These individuals risk their health and safety because they are typically deployed to disaster-prone and response areas and are vulnerable to a variety of physiological, psychological, and behavioural stress (Kumar and Dangi, 2012). Additionally, paramilitary organizations tend to be run with a strict hierarchy that does not focus on the individual (Chhabra and Chhabra, 2013).

A plethora of research suggests a direct relationship between the career and the incidence of stress among law enforcement personnel. Kop et al. (1999) divided law enforcement occupational stress into two categories. The first is inherent stress based on the nature of the work, “such as physical threat, violence, exposure to danger, and facing the unknown” (p. 327) that could result in severe injury to officers themselves or a partner (Malach-Pines and Keinan, 2007). The second category of occupational stress is “organizational stressors, for example management style, poor communication, and lack of support” (Kop et al., 1999; p. 327). Organizational stressors also include shift work, bureaucracy, lack of autonomy, and hostile colleagues. Compounding occupational stress, these individuals are still likely to experience personal stressors, such as work-family conflict (Malach-Pines and Keinan, 2007), which can spillover in both directions (He et al., 2002). Between 2007 and 2009, Mishra (2009) administered a survey to over 10,112 personnel in the Border Security Force (BSF), India’s premier paramilitary agency. Mishra found that job-related issues (52%) were the most reported causes of stress followed by family-related issues (46%) and other factors (2%). It is crucial that any study of law enforcement stress includes both home and work stress measures.

Officers frequently report that the most troublesome aspects of their job relate to the organizational stressors rather than to the aspects of being a police officer (Malach-Pines and Keinan, 2006; Kop et al., 1999). For instance, Malach-Pines and Keinan (2007) found that the top five stressors were inadequate salary, superior’s mistreatment, overload, inadequate resources for job, and slow promotion. Similarly, in a study conducted on police personnel in Chennai, stress was found to be more a result of organizational factors than work-related physical hazards; these factors included inadequate compensation, equipment, and staff; negative interaction with others; lack of recognition; and a heavy caseload (Suresh et al. 2013). This Chennai study aligns with earlier studies by Violanti and Aron (1993) who used a structural equation model to demonstrate that organizational stressors were 6.3 times more impactful on levels of distress than inherent police stressors. Extremely traumatic events, such as killing someone in the line of duty or witnessing the death of a colleague, can be stressful (Violanti and Aron, 1994), but these events are generally rare. Therefore, the inherent job stressors related to law enforcement work, such as daily risk, are an expected part of the job that the individual has chosen to perform (Kop et al., 1999), whereas the organizational stressors are more impactful and can lead to negative consequences.

## **Consequences of Stress**

As in most service careers, law enforcement personnel experience higher levels of burnout. Mostert and Joubert (2005) found that higher occupational stress in South African police officers was associated with higher levels of burnout, especially if these officers used avoidance coping mechanisms. Officers experiencing burnout are also more likely to report their intention to change jobs, suggesting that burnout is also costly for organizations (Jackson and Maslach, 1982). Burnout is especially problematic among law enforcement officers because it leads to both physical and behavioral health risks for the individual coupled with decreased work functioning (Kohan and Mazmanian, 2003), possibly endangering their loved ones, colleagues, and the people they serve (Jaiswal, Dixit and Sajjan, 2015). It can also make

individuals more likely to condone officer violence (Kop et al., 1999) or use excessive force themselves (Kumar and Dangi, 2012). These effects may result in a dangerous situation for not only the officers themselves but also for the general public. Excessive stress affects the health of personnel and results in higher rates of mental health issues, such as high suicide rates, anxiety, depression, substance abuse, and decreased job satisfaction (Singh, 2007). According to Chhabra and Chhabra (2013), the suicide rates in the Border Security Force (BSF), an Indian paramilitary force, were above both the national average and that of the Indian Army, but suicide is often dismissed as related to the individual and not situational stemming from their high stress career. BSF personnel were identified to be suffering from high levels of occupational stress for a large number of reasons, including personal, family, and organizational issues. In a subsequent study in 2010, Mishra examined suicide among BSF personnel (n=10,275) between 2007 and 2009 and found that respondents reported a host of stressors: relationship difficulties (63%), multiple problems (unspecified 60%), work related problems (37%), mental health issues (37%), substance abuse (29%), financial problems (24%), involvement in criminal activity (18%), and legal problems like departmental investigation (14%). Mishra suggested that these stressors were most likely the causes of the high incidence of suicide among BSF personnel. However, the symptoms of stress have not been studied in Indian Paramilitary forces.

## Stress Buffers

**Work-life balance:** Work-life balance may be difficult to achieve in law enforcement given the long hours, but there is a lack of research on this issue with law enforcement personnel, especially in non-Western countries (Lambert et al., 2016). Many aspects of policing work, namely working long hours and shifting from the detached and forceful police officer to loving and supportive family member, may cause work-life conflict (Pandey, 2016) although it has been found that family can buffer stress levels (Selokar et al., 2011). Additionally, workplace policies can aid in decreasing stress levels, possibly through policies to improve workload management or organizational culture. These policies may help job satisfaction, which Stinchcomb (2004) claimed is the first to erode from occupational stress on the path to burnout. Officers with higher job satisfaction and related positive work attitudes tend to exhibit higher rates of positive organizational citizenship behavior, but extreme organizational stressors threaten job satisfaction and diminish the buffering effect of job satisfaction (Violanti and Aron, 1993). Excessive occupational stress affects individuals, their families, and also law enforcement organizations, since dissatisfied officers are more likely to miss work or leave the force (Malach-Pines and Keinan, 2006). However, officers are less likely to leave the force if they actively cope with stress, but that can be difficult given the climate of many law enforcement organizations. Families are also affected because officers suffering from excessive stress or burnout are more likely to be angry, to pull away from the family, and to report marital discord (Jackson and Maslach, 1982). If job demands leave officers exhausted and preoccupied, they have fewer resources for their family and their organization (Burke, 1993).

**Social support:** Although occupational stress may be unavoidable, Wisniewski and Gargiulo (1997) found that workplace social support could render it tolerable for certain careers, such as education. Nov (1991) claimed that social support may function to “reduce the intensity of a perceived threat and to enhance the perceived self-efficacy for coping with the threat” (p. 513), as observed in law enforcement work, where perception of the stressors impacts the level of stress (Kohan and Mazmanian, 2003). Rathi and Barath (2013) found that workplace social support decreased work-life conflict and life satisfaction in Indian police officers. They stated that these factors are essential in collectivist cultures where an emphasis is placed on family and social obligations, which can be difficult to meet with the schedule of someone in law enforcement. However, the climate surrounding police and similar work often is a rigid

organizational structure that discourages collaborative or supportive relationships between superiors and subordinates (Violanti and Aron, 1994).

## **Method**

### **Participants**

The participants consisted of 367 members of one of the Indian paramilitary forces. Most (94.3%) were male and had a mean age of 37.8 years. On a question relating to their children, only 13.9% answered not applicable, suggesting that most currently have children.

### **Questionnaire**

The questionnaire was adapted from Peiffer's (1976) book on stress management. It included 50 questions divided into 5 sub scales of 10 questions each. These sub scales related to Human Nature (e.g. irritability), Circumstances (e.g. recent job changes or marriage), Human Body and Mind (e.g., symptoms of stress such as anxiety or disturbed sleep), Home Life (e.g. lack of family support), and Work Life (e.g. unsupportive colleagues).

### **Methods/Procedure**

Data were collected May through August 2015. After receiving informed consent, the researchers administered the self-screening questionnaire on the Stressometer online platform. Researchers were available for support if needed. All participants were provided explanations of their results.

### **Data Analysis**

Descriptive statistics were calculated to examine the response patterns. Scores on questions were examined by Sub scales and the Total score. Spearman correlations were used to analyze the relation between the Sub scales and Total Score. Answers of Can't Say or Not Applicable were scored as missing.

## **Results**

Several questions had noteworthy patterns of responses and moderate correlations with clinical ratings. Almost half of the respondents (46.9%) stated that they are oversensitive (See Table 1). In terms of Body/Mind, a substantial number of respondents reported that they have been more irritable or emotional in the last month (40.1%), have worrying thoughts or feel anxious (37.1%), have disturbed sleep (36.3%), have erratic eating patterns (36.0%), have stomach troubles (15.3%), have a racing heart for no reason (19.9%), feel tired or weak for no apparent reason (33.5%), get body aches or vague pains for no apparent reason (26.8%), or feel like leaving everything and going away (20.2%).

In terms of recent circumstance changes, a few (10.9%) had experienced a change in job type or assignment in the last three months, and almost half (42.8%) had seen an increase in their job responsibilities. Stress at home was found mostly when someone close to them was experiencing stress (35.4%), or feeling isolated or lonely at home (27.6%), perceiving insufficient emotional and moral support (26.1%), and feeling a lack of appreciation from family or partner (20.9%).

In terms of work stress, 32.2% found their work atmosphere stressful at least sometimes, 30.8% found their colleagues/peers sometimes unsupportive, 41.1% reported working much more than their colleagues/peers, 15% felt that politics interfered with work productivity, 22.1% felt that formalities at work interfered with productivity, 27.5% had to deal with hostility from their colleagues/peers, 36.3% found their work environment inadequately equipped, and 21.0% felt isolated at work (See Table 3).

All correlations between the sub scales and total score were significant (all  $p$ -values  $<.001$ ) (See Table 4). For the Total Score the mean was 44.2 (SD=12.23, maximum=121 of possible 140).

## Model

A model was developed based on the pattern of responses and the literature review (see Figure 1). This model includes aspects of the occupational space that are potential stressors, namely Work Environment (e.g. safety, equipment), Workload (e.g. time pressures, high workload), Public Interactions (e.g. aggressive individuals, emotional/traumatic experiences), and Employee Value (e.g. compensation, job security). These factors are affected by training and become occupational stressors that are attenuated by Work-Life Balance, Family Support Structure, and Work Support Structure. Certain aspects of the occupational space are more modifiable for stress reduction purposes. For instance, it may be impossible to prevent emotional experiences resulting from co-worker death or increase compensation, but if problematic workplace safety or inadequate equipment is an issue, the problems could be resolved. Coping interventions, such as providing peer and supervisor training to provide support for law enforcement personnel identified as highly stressed or diagnosed with a behavioural health disorder, may also be necessary.

## Discussion

Overall, the paramilitary personnel in this sample were considerably stressed, but the level of stress was lower than in previous studies noted in the literature review (e.g. Nathawat and Dadarwal, 2014; Malach-Pines and Keinan, 2007 and 2006). In the current sample, almost 40% reported disturbed thoughts, sleep, and/or eating. The comparatively lower levels of stress in the current study suggest that these individuals in the study are more resilient or hardy (Nathawat, 2016), the work environment is less stressful, or the stress is buffered in some way. However, it is significant that even 40% of the current sample was experiencing symptoms, especially since they are entrusted with powerful weapons, and extreme stress levels can have considerable effects on the individual, their families, their colleagues, and the people they serve. Additionally, in this sample, some participants were willing to admit to mood and cognitive symptoms, unusual in India where somatic symptoms are more likely to be reported (Patel et al. 2001). Perhaps a few of these individuals had reached a tipping point forcing them to realize that they needed help, or perhaps completing the survey encouraged them to divulge the full range of symptoms. One-fifth stated they feel like leaving everything and going away, a significant finding that illustrates the high level of desperation among these armed personnel.

Law enforcement officers are hesitant to seek treatment for behavioural health issues. Waters and Ussery (2007) stated that officers may not be convinced that clinicians can understand the stress of a career in law enforcement and admitting a problem in the police culture is viewed as a sign of weakness, going against the macho image of police officers (Kop et al., 1999). Perhaps some of these issues could be addressed by including trained counsellors with each group, creating anonymous ways to give feedback and seek help in an emergency (Chhabra and Chhabra, 2013).

It is important for the organizational culture to emphasize the importance of seeking help when needed. The main reason law enforcement personnel avoid treatment could be a belief that reporting mental, emotional, or behavioural health issues can cause an adverse personnel action or even endanger their career. Those who seek help may be labelled as not fit for duty, and records of these health issues may be used against them in court cases (Waters and Ussery, 2007). These hesitations are troublesome, given the high levels of stress seen in these groups, which sometimes can lead to extreme actions, including suicide. Suicide is a problem in India with reports of over 100 soldier suicides per year, even

with attempted interventions to reduce the rate (Pandit, 2014). Although many individuals may have had other life stressors or been exposed to an extreme stressor, the suicide rate still highlights the inherent mental and health issues affecting individuals in these occupations. Chhabra and Chhabra (2013) stated that the key to combating high stress and its consequences, such as suicide, in paramilitary is to develop screening tools and assessing recruits at entry. It would be even better to examine the behavioral health of these individuals frequently as they are exposed to occupational stressors to ensure that they are coping. Therefore, administering a questionnaire on a software platform, such as Stressometer, on a regular basis may encourage those suffering to seek help from qualified healthcare professionals. This platform can address the long-standing challenge of limited mental health resources with the large paramilitary forces in India.

### **Work-Life Balance**

For work-life balance, organizational climate plays a significant role in whether an individual in human service work can cope with the exigencies of the job demands (Cotton and Hart, 2003). Occupational issues often play a major role in the amount of stress experienced. For example, research with Indian constables reported the following occupational stressors: lack of interest from superiors in their subordinates, irregular office work, intense workload, and dealing with criminals (Srinivasan and Ilango, 2013). Research with the Border Security Force in India reported additional issues: lack of sleep, rest, and leave; lack of complaint procedures; poor relationships with and treatment by superiors; poor service environment; excessive pressure; lack of appropriate training; and separation from family (Chhabra and Chhabra, 2013). Policies that change organizational culture may provide support for stress levels and work-life balance.

The other factor in work-life balance is home life. Many of the participants have families who worry about them every time they go on duty and their life is at risk, a worry that is exacerbated when the individual is deployed away from home (Verma et al., 2013; Prabhu, 2010). Paradoxically, a family can serve as both a source of social support and an additional stressor. If individuals are so stressed that the job affects their home life, they may feel the need to leave the force (Jackson and Maslach, 1982), which is problematic for the organization. Although individuals may try to separate job and family, this separation is especially difficult for those in the helping professions, and stress tends to transfer from home to work and vice versa. Jackson and Maslach (1982) stated that law enforcement officers often experience marital troubles because of the “long irregular hours, being on call, safety concerns, and adverse public opinion” (p. 65). The wives of police officers in their study reported that the officers came home from work “upset or angry, tense and anxious, and in a complaining mood; despite their apparent physical exhaustion, they have difficulty sleeping at night” (p. 74). Overall, excessively stressed law enforcement officials seem to make inferior officers and miserable family members; therefore, interventions are essential to enable them to function as they should in both areas.

### **Social Support**

Perceived social support may buffer or eliminate the negative effects of stress from various occupations, including law enforcement, on health and job strain (LaRocco et al., 1980). However, about a third of the current sample reported a lack of support, appreciation, and feelings of isolation at home, suggesting that for some family may cause stress more than buffer it.

In terms of the occupational stressors, departments should make every effort to maximize social support at work, which is often found to be lacking. The role of social support has also been documented by Noy (1991), who found that soldier unit cohesion and positive management led to better results

whereas lack of cohesion was associated with higher rates of combat stress reactions. Law enforcement agencies must support their officers by providing more opportunities for a better support structure and a healthier work climate. However, 76% of police officers report they do not feel adequately trained to handle stress (Malach-Pines and Keinan, 2007). The high frequency of organizational stressors suggest that even with routine duties, individuals may be affected unless they feel compensated and are treated fairly.

Many law enforcement agencies have begun to recognize the costs of high stress, but have focused on addressing it as an individual issue, which neglects the organizational causes of stress that may be the main source for many individuals (Stinchcomb, 2004). Addressing workplace stressors may be difficult for departments or units if the stressors are a factor of administrators or the occupational climate, but acknowledging and addressing these stressors is crucial in using an organization-focused, proactive stress prevention strategy. He et al. (2002) has stated that a key to lessen police officer stress is to create “greater flexibility in accommodating police officers’ professional, personal, and family needs” (p. 699). These studies confirm that police organizations can mitigate stress among their employees by providing coping mechanisms and training opportunities that promote a healthier work life.

### Limitations and Future Work

The current study has several limitations worth mentioning. It is based solely on self-report data; as such, individuals may hesitate to report all of their stress symptoms and causes because of stigma or the police macho culture (Kop et al., 1999). To better understand the intricate relationships between the subscales, future studies should include those close to the individual, such as family members, colleagues, and supervisors. This additional information would illuminate where the behavioral, emotional, and mental health issues are most problematic so that precise treatment can be prescribed.

While the current study included age, which has been shown to influence stress in Indian paramilitary officers (Balakrishnamurthy and Shankar, 2009), it did not examine other demographic variables, such as rank. Officer rank can also influence the experience of stress, with subordinate officers ranking stressors like job boredom, qualitative work overload, and lack of praise more detrimental than senior officers (Mathur, 1994). Physiological data such as cortisol levels and vitals may also be beneficial for a more thorough examination of stress and behavioral health. A full clinical analysis of individuals to ascertain what behavioral issue is present would also be enlightening. Overall, more research is essential on this vulnerable and underserved group.

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Table 1

#### *Descriptive Statistics Selected Yes/No Questions*

	Yes	No	Can't Say/Not Applicable
Frequently sad or low	11.7%	72.5%	15.8%
Fearful or anxious	17.7%	74.4%	7.9%
People take advantage of you	28.1%	60.2%	11.7%
Oversensitive	46.9%	41.4%	11.7%
Irritable easily	22.9%	65.4%	11.7%



Table 2

*Descriptive Statistics for Selected Likert Questions*

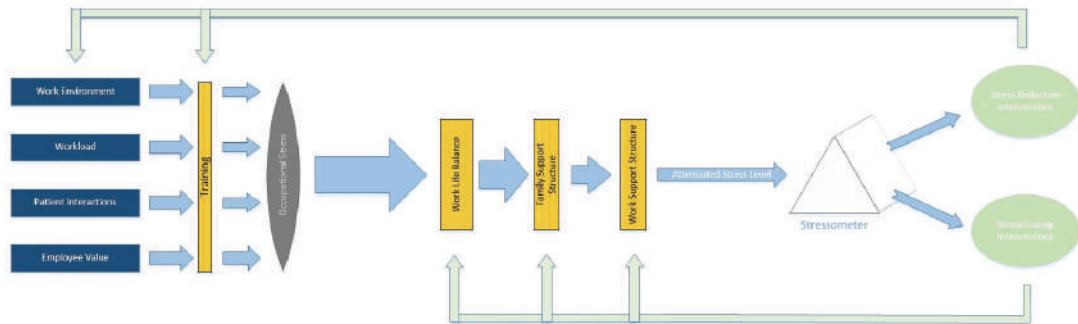
	Never	Sometimes	Often	Always	Can't Say/Not Applicable
Recently more irritable or emotional	55.0%	32.2%	6.3%	1.6%	4.9%
Recently getting worrying or anxious thoughts	59.9%	27.0%	7.9%	2.2%	3.0%
Disturbed sleep	62.9%	24.8%	8.2%	3.3%	0.8%
Erratic eating	61.3%	22.9%	11.2%	1.9%	1.7%
Heart beats fast even when resting	78.2%	15.3%	3.5%	1.1%	1.9%
Tired or weak	64.9%	24.8%	6.5%	2.2%	1.6%
Body aches	71.7%	18.0%	6.3%	2.5%	1.6%
Feel like leaving everything	78.5%	16.9%	1.4%	1.9%	1.9%
Insufficient emotional/moral support	70.8%	15.3%	5.4%	5.4%	2.8%
Lack of appreciation	75.7%	12.5%	3.5%	4.9%	3.0%
Isolated or lonely at home	70.3%	20.2%	4.4%	3.0%	1.9%
Work atmosphere stressful	64.9%	25.1%	4.6%	2.5%	2.8%
Colleagues/peers unsupportive	64.9%	22.9%	4.1%	3.8%	4.1%
Deal with colleague/peer hostility	68.4%	22.3%	2.7%	2.5%	3.8%
Work more than Colleagues/peers	55.0%	28.9%	5.7%	6.5%	3.6%
Work formalities interfere with work	72.5%	16.6%	2.2%	3.3%	5.2%
Feel isolated at work	76.8%	16.9%	3.0%	1.1%	1.9%

Table 3

Descriptive statistics for Subscales and correlations between Subscales and Overall Score. All p values < .001.

	Mean (SD)	Body/ Mind	Nature	Work Life	Home Life	Circum- stances	Overall
Body/Mind	13.4 (4.08)						
Nature	3.69 (2.02)	0.466					
Work Life	12.9 (4.12)	0.479	0.293				
Home Life	12.3 (4.15)	0.582	0.362	0.421			
Circumstances	1.9 (1.43)	0.418	0.278	0.262	0.433		
Overall	44.2 (12.24)	0.842	0.616	0.701	0.767	0.571	

Figure 1. A model connecting occupational stress, stress attenuators, and possible interventions.



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# Role Expectations of Police Personnel: Development of the Tool and of Its Psychometric Structure



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Dr. Mahesh Kumar Maurya

## Abstract

Despite the understanding that police personnel face role ambiguity in relation with their duty, there are not many tools specific to Indian culture that measure police role expectations. The study aims to develop an indigenous tool to assess the role expectation among police personnel. Role expectations scale was developed for this study in Hindi and English. The scale contains 18 items. Responses to each item was measured on Likert-type five point scales, ranging from (1) totally disagree to (5) totally agree. Factor analysis by the principal components method with varimax rotations yielded four factors, namely, Aggressiveness, Facilitative, Conformist and Authoritative role expectations. Factor analysis was conducted on the total sample of 203 police personnel. Cronbach's Alpha reliability coefficient for the factor 'aggressiveness' was .77, for the factor 'facilitative'.77, for the factor 'conformist' .70 and for the factor 'authoritative'.65. The reliability coefficient of the scale was 0.77. The proposed inventory has face validity since the questions are directly related to the police role expectation dimensions. Limitations of the study are that it needs further testing on larger samples in police personnel. Social desirability bias reported in the study was not controlled in this scale.

## Key words

Aggressiveness, Facilitative, Conformist, Authoritative, Role Expectation, Police Personnel.

## Introduction

The policeman's role has come under considerable scrutiny in the past few years. Unfortunately, much of the writing that deals with the subject is woefully inadequate with regard to a true understanding of the police role in contemporary society. A major failing has been the lack of an adequate definition, and this has led to much confusion. The state that now exists, then, is often one in which the policeman is seen as an individual who carries a gun, wears a badge, and is sworn to "enforce" the law. All Role expectations for police personnel have been found to be based upon the nature of their duties at different levels. It relates to anticipation of the part played by a person in a particular social setting, influenced by his expectations.

Since the past few years police have been experiencing a major change in their role expectations and this change has been brought on in large part by the advent of community policing philosophy (Schmalleger, 2002). In addition, courts have influenced the police role through decisions regarding the content of substantive criminal law and by giving instruction as to the due process of law (Roberg, 1976).

Gilligan (1977) and others (DuBois, 1985) maintain that differing socialization experiences of males and females incline men and women to adopt differing perspectives on justice for men, predominantly a morality of justice, and for women, predominantly a morality of care. Men and women differ in their conception of the police role, with men concentrating on law enforcement and women likely to perceive the role more broadly as service and community oriented. It has also been suggested that men may be more at ease than women with the rules, hierarchy and discipline of police organizations (Worden, 1993). Female police officers have been assumed to have greater commitment to public service, more calming and reassuring demeanours, and less violent encounters with citizens (Bell, 1982).

Martin (1979) first drew attention to the occupational role dilemmas based on gender stereotypes faced by female police. Policewomen emerge as tokens in a male-dominated occupation. They confront a number of dilemmas which arise from the apparent conflict between sex role norms and occupational role norms. These dilemmas include performance pressures, isolation from co-workers, tests of loyalty and entrapment in stereotypic roles. Martin found that policewomen rigidly conform to formal and informal occupational norms, and over achieve in order to prove themselves exceptions among women. Policewomen, however, underachieve as patrol officers, often falling into cycles of demotivation and failure. They accept stereotypic roles, display low work commitment and seek non-patrol assignments. There is also evidence that female police are not accepted as full professional colleagues by male co-workers (Balkin, 1988).

Selen and Schepers (2001) describe the duties they want to see the police fulfill. Ensuring a harmonious residential environment in the community, preventing, solving and managing problems relating to security and personal safety, and protecting as well as comforting civilians are some of those duties. The duties, therefore, are guided by the expectations, concerns and feelings of insecurity expressed by the public, in collaboration with the official authorities, other police services and social organizations in a professional and qualitative manner. Another special role, described by the United States Supreme Court, is the community caretaking function (Call, 1998). Although the function is often based on investigation or law enforcement, it focuses substantially on public safety and as such can be seen as a peacekeeping function.

A special role described by Katz, Webb and Schaefer (2001) is quality-of-life policing. This approach adopts the 'broken-windows' concept and seeks to focus on aggressive enforcement of public disorder offences. The researchers investigated the impact quality-of-life policing had on disorder and their findings suggest that efforts did have a strong effect on reducing problems associated with public morals and physical disorderliness problems.

Community policing is generally defined as an organization wide philosophy and management approach. This approach focuses on community, government and police partnerships, using proactive problem solving and community involvement to address the causes of crime, fear of crime, and other community related issues (Hess & Wroblewski, 2002). Police have considerable resources within their control and should assume a leadership role in trying to motivate citizens to become involved (Roberg, Kukendall & Novak, 2002).

Fielding (2002) investigates the theoretical background of community policing. He cites Adam Smith, who described the police institution as 'the second general division of jurisprudence' (Fielding,

2002). Fielding describes the historic meaning of the term 'policing' as more related to the term 'policy' than 'police force' to distinguish domestic governance from foreign affairs and he goes on to identify the emergency function of the police. This function means that the police can become involved regardless of the nature of the problem as long as something needs to be done immediately. The emergency function can also be placed under both the order maintenance and service categories. Sykes (1986), on the other hand, describes the role of street justice. He sees the legal authority for peacekeeping activities as unclear and ambiguous in liberal culture.

Although most experts today agree that a major part of police work is order maintenance or peacekeeping, this observation is not mirrored by police legislation (Senna & Siegel, 1990). The most important order maintenance functions in state law are preserving the peace and suppressing riots. The quality-of-life policing described by Katz *et al.* (2001) is not part of state legislation yet.

## METHOD

The investigators developed a questionnaire, which comprised of 24 questions, identifying four role expectation domains. A panel of judges (5 in numbers) evaluated the items and pretest of the same was done in a small subset of the target population.

### Item Generation and Review

Face validity of a measurement scale means that the scale is appearing to measure what it is designed to measure. It is a basic requirement for construction, development or improvement of any measurement scale (Priest, McColl, Thomas & Bond, 1995; Rattery & Jones, 2007). Items are generated for a new scale, keeping in view what needs to be measured, taking the views of available experts in the field and prospective respondents for scale development, incorporating the wisdom from relevant published literature (Maurya & Agarwal, 2015; Maurya & Agarwal, 2013; Maurya & Agarwal, 2012; Schmalleger, 2002; Katz, Webb & Schaefer, 2001; Gayre, 1996; Worden, 1993; Senna & Siegel, 1990; Sykes, 1986).

### Pilot Study

A pilot study for testing the measuring instruments was conducted on 80 police employees in Varanasi and Mirzapur in the state of Uttar Pradesh. The questionnaires administered to the participants consisted of scales which measured participants' perception of police role expectation on dimensions, **aggressiveness, facilitative, conformist, authoritative role Expectation** and demographic information. Along with the responses of the participants to the questionnaires, interviews were also conducted for obtaining their assessment of the items in the instruments. The data obtained was analyzed by computation of total correlation for testing the appropriateness and adequacy of the measuring instruments. On the basis of the pilot study, several items from the questionnaires were modified and some were also omitted. The questionnaires were finally translated into Hindi. The final tool after pretesting consisted of 18 items and 4 domains.

### Sample

The final study was conducted on a sample of civil police employees (N=203), 144 male and 59 female police employees. The data have been collected on the police organization in the state of Uttar Pradesh in India at four district namely Allahabad, Varanasi, Mirzapur, Lucknow. Mean age of the sample in the civil police organization was 37.49, mean experience of the participants is 14.81 and mean salary of the participants is 20726.01 Rupees. The minimum age of participants in the sample in the civil police organization was 21 years and maximum age was 60 years. The minimum experience of the participants

is 1 years and maximum experience of the participants was 40 years. The salary drawn by the civil police ranged from Rs. 12,000 per month to Rs. 40000 per month. The participants also differed widely on the basis of education (14) High School, (49) Inter, (100) Undergraduate and (40) Post graduate (M.A./LLB).

**Validity of the Scale**

Validity of a measurement scale (Bryman & Cramer, 1997) signifies that the scale is measuring what it is designed to measure. It is necessary to assess and enhance the validity of a measurement scale under development. It is also desirable to demonstrate the validity of an established measurement scale before taking inference from the measurements made through it. Role expectation scale was given to a panel of three experts to establish face validity. The expert panel consisted of Professors of Psychology. The panel examined the items for its comprehensiveness, relevance of each item for the target group in the Indian cultural context, and redundancy. Their suggestions were incorporated into the tool and necessary modifications were made.

Further, discussions about the items were held with a small sample of respondents with their consent, (n=80, 40 male and 40 female), who are a subset to identify and eliminate potential problems. All aspects of the questionnaire, including question content, comprehension, wording sequence, form and layout, question difficulty, and instruction were discussed. Based on the feedback from the pretest, the questionnaire was edited, and the identified problems rectified. Pretesting was continued until no further changes were needed. The final tool after pretesting consisted of 18 items and 4 domains.

**Procedure**

Male and Female civil police Personnel were approached by the researcher after obtaining permission from the authorities. Participants were allowed to complete the survey privately and were instructed to return their results to the researcher. All 203 subjects voluntarily completed and returned the survey while the researcher maintained confidentiality. A non-probability sampling method was used because it’s inexpensive and convenient for the only available population; however, its disadvantages are that it may involve bias and representativeness and unable to estimate sampling error.

**RESULTS & DISCUSSION**

Results from scale for assessment are reported and discussed in order of execution.

**Police Role Expectations Scale:** Role expectations scale was developed for this study by the researcher in Hindi and English. The scale contains 18 items (Table 1). Responses to each item was measured on Likert-type five point scales, ranging from (1) totally disagree to (5) totally agree. The response score range is 18-90.

**Instruction:** Please Indicate with a tick your opinions on the five point scale ranging from (1) totally disagree to (5) totally agree.

**Table 1. The Short Index of Police Role Expectations Inventory.**

	Item	Totally disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Totally agree
1.	I am expected to be hard with others.					
2.	I am expected to be forceful.					
3.	I am expected to willing to be rigid.					

4.	I am expected to show competitive behaviour.					
5.	I am expected to be ambitious.					
6.	I am expected to act like a leader.					
7.	I am expected to be tough.					
8.	I am expected to be dominating.					
9.	I am expected to be angry.					
10.	I am expected to be soft with others.					
11.	I am expected to be gentle.					
12.	I am expected to be flexible.					
13.	I am expected to be show co-operative behaviour.					
14.	I am expected to be contented.					
15.	I am expected to be act like a follower.					
16.	I am expected to be weak.					
17.	I am expected to be submissive.					
18.	I am expected to be calm.					

### Factor Analysis of the Scale

The factor analysis was carried out by following principle component solution (Hotteling, 1933) with a varimax rotation (Kaiser, 1958). Four factors were selected on the basis of Kaiser's criterion. According to this criterion only the principal components having latent root or Eigen value or common factor variance greater than one are considered essential and should be retained. When we take the sum of squared values of factor loadings relating to a factor then such sum is referred to as Eigen value or latent root. Eigen value indicates the relative importance of each factor in accounting for the particular set of variables being analyzed. Factor analysis was conducted on the total sample of 203 police employees. Details of the factor analysis appear in Table 2.

#### Factor-I (Aggressiveness role expectation)

This factor has an Eigen value of 3.18 and shares 17.69 % of total common variance by the principal components method with varimax rotations. This factor has six items, namely aggressiveness role expectation. Cronbach's Alpha reliability coefficient for the factor-I 'aggressiveness' was .77.

#### Factor-II (Facilitative role expectation)

This factor has an Eigen value of 2.77 and shares 15.41 % of total common variance by the principal components method with varimax rotations. This factor has five items, namely facilitative role expectation. Cronbach's Alpha reliability coefficient for the factor-II 'facilitative' was .77.

#### Factor-III (Conformist role expectation)

This factor has an Eigen value of 2.01 and shares 11.12 % of total common variance by the principal components method with varimax rotations. This factor has three items, namely conformist role expectation. Cronbach's Alpha reliability coefficient for the factor-III 'conformist' was .70.



**Factor-IV (Authoritative role expectation)**

This factor has an Eigen value of 1.99 and shares 11.08 % of total common variance by the principal components method with varimax rotations. This factor has four items, namely authoritative role expectation. Cronbach’s Alpha reliability coefficient for the factor-IV ‘authoritative’ was .65

**Table 2. Domains and the items after factor analysis showing factor loading, eigen value, percent of variance and chronbach alpha.**

	Item		Factor Loadings	Eigen Value	Percent of Variance	Chronbach Alpha
Factor 1 Aggressiveness	S 2.	I am expected to be forceful.	.707	3.18	17.69	.77
	S 3.	I am expected to willing to be rigid.	.632			
	S 4.	I am expected to show competitive behaviour.	.783			
	S 5.	I am expected to be ambitious.	.711			
	S 8.	I am expected to be dominating.	.546			
	S 10.	I am expected to be soft with others.	.518			
Factor 2 Facilitative	S 11.	I am expected to be gentle.	.604	2.77	15.41	.77
	S 12.	I am expected to be flexible	.632			
	S 13.	I am expected to be show co-operative behavior.	.783			
	S 14.	I am expected to be contented.	.793			
	S 15.	I am expected to be act like a follower.	.705			
Factor 3 Conformist	S 16.	I am expected to be weak.	.846	2.01	11.12	.70
	S 17.	I am expected to be submissive.	.800			
	S 18.	I am expected to be calm.	.630			
Factor 4 Authoritative	S 1.	I am expected to be hard with others.	.831	1.99	11.08	.65
	S 6.	I am expected to act like a leader.	.488			
	S 7.	I am expected to be tough.	.721			
	S 9.	I am expected to be angry.	.462			

**CONCLUSIONS AND LIMITATIONS**

The article provides an inventory for measuring role expectation of police personnel. The proposed inventory has face validity since the questions are directly related to the police role expectation dimensions. The results of the study conducted suggest that the proposed inventory is also consistent and reliable. Future work can be carried out on further validation of the proposed inventory, correlating the inventory to other role expectation inventories. Limitations of the study are that its needs further testing on larger samples in police personnel. Social desirability bias reported in the study was not controlled in this scale.

## Recommendations

1. Police role expectation scale presented in this study with acceptable reliability and validity can be used for identifying roles in police organizations.
2. Police roles can be redesigned for police personnel incorporating the wisdom from relevant published literature, taking the views of available experts in the field and observation that is mirrored by police legislation.
3. Future work can be carried out on further validation of the proposed inventory on larger samples in police samples, correlating the inventory to other role expectation inventories. Social desirability bias reported in the study was not controlled in this study. Social desirability bias should be also controlled.
4. Further research may be conducted on the role expectation of the police personnel, its determinants, and correlates in different type of organizations across age groups, hierarchical levels, qualification levels, functional group and gender. Individual and organizational strategies for dealing with role expectation may be emphasized for wellbeing and job satisfaction.

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# Distribution of Incidents and Registration of Crime Across Jammu & Kashmir, India



Ramesh Pandita

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## Abstract

The present study examines the prevalence of crime in the state of Jammu & Kashmir by analyzing the secondary data pertaining to the registration of crime incidents across the state. The study will give an insight about the public faith in the judiciary of the state in general and the law enforcing agencies like police in particular. The study determines the growth and the distribution of crime across the state during the period 2005-2014. Some of the key concepts studied include, increase in crime across the state during the last decade, distribution and registration of crime incidents across the different district headquarters of the state.

## Key words

Jammu & Kashmir, Crime, JKP, Crime Growth, Crime Registration, Crime Distribution, FIR

## Introduction

Since time immemorial, in each era crime in society has moved hand in hand. There may hardly be any society in the world, which may be elusive of crime or crime incidents. Crime has moved and grown alongside the societies have moved and grew. It has been observed that in each kind of society, during every era, people have faced criminal acts. The egalitarian or utopian society is merely a talk of idealism, which is far from reality.

Social security is one of the foremost aspects associated with the quality of life. It is always desirable in any democratic country to have such a system in place, whereby people may feel secure by having a zero tolerance towards crime. The social, cultural, institutional and personal interests of individuals in a society should be protected by all social means. Policing is one such institutional practice in place across most of the societies in the world to maintain law and order, and to ensure a sense of security among the subjects. People do come forward to register the incidents of crime with the law enforcing agencies in bringing things to justice.

Murder, rape, theft, burglary, arson, kidnapping, extortions, sexual abuse, molestation, harassment are some of the common forms of crime incidents taking place in each kind of society. Some other forms of crime incidents in society are related to corruption, nepotism, money laundering, black marketing,

and many more. As per the crime in India (1995) <sup>[1]</sup> figures, there are 41 murders per million population in India, with no significant difference among rural and urban population, which is being considered as relatively low figures for a medium developed country. However, a significant variation was found between major cities, as compared to 7 murders per million populations in Calcutta 164 murders were observed per million populations in Patna.

In the present study attempt has been made to examine the rate of incidence of crime in the state of Jammu and Kashmir during the last decade. It may not be out of context to mention that the state of Jammu & Kashmir is passing through a lean patch, wherein the secessionist movement broke down in the year 1989 and it is almost a quarter of a century, but the state is still reeling under social unrest. Given the fact, there is every possibility that incidents of crime in the state may have increased. The study has been undertaken on the secondary data retrieved from the official web site of the Jammu & Kashmir police. The study analyzes the registration and the growth of crime incidents across the 22 district headquarters of the state, along with the details pertaining to population, police stations and the geographical size of each individual district.

## Brief Background Information about Jammu & Kashmir

The state of Jammu & Kashmir is located between 32° - 15' and 37° - 5' north latitude and 72° - 35' and 80° - 20' and east longitude, spread over an area of 101387 square km. The state of Jammu and Kashmir was one of the princely states, which acceded to the union of India in 1947 by signing an instrument of accession with the union of India on October 26, 1947 and since then became an integral part of the union of India <sup>[2]</sup>. As per the 2011 census, the state of Jammu & Kashmir has a population of 1,25,48,926 persons, having a literacy rate of 68.70%, which makes the state as one of the least densely populated states of the union of India with a density of 124 persons per sq km <sup>[3]</sup>. The state has 22 district headquarters with 135 blocks and 82 tehsils, which function as administrative units having, Urdu, Kashmiri and Dogri as its official languages <sup>[4]</sup>. The Jammu & Kashmir state shares its borders with the countries like Pakistan, Afghanistan, China and Tibet from western and north eastern side. While as Punjab and the Himachal Pradesh are the only two states which are bordered by state and connected it with the southern plains of India. The state of Jammu & Kashmir has a unique geography with a natural divide into three different regions have three different temperate zones with each zone having altogether different culture, language and social setup.

Figure-1

Map of Jamm & Kashmir state along with district headquarters



(Map of Jammu & Kashmir State)

## **Brief Information about Jammu & Kashmir Police**

The history of Jammu & Kashmir Police dates back to 1873 AD by appointing one Kotwal and 14 Thanedars in the Srinagar City. The system put in place used to control crime and maintain law & order with the help of Chowkidars and Harkars, who more or less used to render services on Jagmani system, as they used to receive some agricultural and other produce from local populace on a voluntary basis. Mr. Broadway, an Imperial Police officer is known to be the first Inspector General of Jammu & Kashmir Police, who assumed the charge of the state police in 1913 on deputation, hence unfurled the formal beginning of the Police as a state institution to maintain law and order. Thereafter, there was no looking back for the Jammu & Kashmir police, which has already undergone several reorganizations <sup>[5]</sup>.

Since 1889-90, from the modest strength of 1040 contingent the Jammu & Kashmir Police has moved leaps and bounds. The contingent grew to 1570 personnel by 1903 and 3179 personnel by 1943-44 and as on date the Jammu & Kashmir Police is a strong contingent of 83000 personnel, which apart from guarding the life and property of the subject also takes care of regulating crime and maintaining law & order in the state.

## **Objectives of the Study**

To examine the growth and distribution of crime across 30 police districts of Jammu & Kashmir during the last decade viz., for the period 2004-2015.

To assess & evaluate the public awareness towards registering FIR's in against the criminal incidents.

## **Problem Statement**

One of the very fundamental problems associated with crime researchers is how many criminal incidents actually take place and how many of such incidents get actually registered with the local police. Registering the First Information Report with the police by public gets influenced by a range of factors, and these factors act as impediments in registering FIR's, hence makes it practically impossible to have exact data about the rate of incidence and rate of reporting the crime. In the present study data has been retrieved from the official website of the Jammu & Kashmir Police, registered with crime branch. Given the fact, the results reflected in the data analysis part can be termed more as a prevailing crime trend in Jammu & Kashmir rather actualizing the statistics. There is every need to observe caution while trying to actualize the figures and may more be taken as a trend rather facts.

## **Scope/Approach/Methodology**

To undertake the present study data was retrieved from the official website of the Jammu & Kashmir Police available with its crime branch, which can be accessed at <http://crimebranchjkpolice.nic.in/docs/stat1.pdf>. The data was retrieved on July 16, 2015 and was in semi-structured manner and as such was first structured keeping in view the objectives of the study.

The data analysis has been carried out as per the police districts in the state. It is pertinent to mention that administrative district and the police district are two different functional units of state administration and the Jammu & Kashmir Police as an executing institution. Both the administrative and police districts are distributed on the basis of area and accordingly, we may find that, in all there are 22 administrative districts of Jammu & Kashmir, while as the same area stands divided into 30 police districts by the Jammu & Kashmir Police. This includes Crime & Railways Jammu & Srinagar and Railways Katra. Since the study confines to the analysis of crime incidents across the civil society of Kashmir as such incidents of crime recorded with and railways & crime across the state has been

excluded from the analysis. Also the criminal incidents recorded in the police district of Awantipora have been merged with its parent district Pulwama and accordingly, the incidents of Handwara and Sopore have been merged with the Kupwara.

### **Limitations of the Study**

It is always difficult to ascertain the exact amount of criminal incidents taking place in and around a society, as a good number of such criminal incidents are never registered with police or any other crime investigating agency. Many a times, it is being observed that people fearing for their lives prefer to remain silent rather registering a case with any such agency. Accordingly, the figures undertaken for analysis in the present study are simply of those cases which stand registered with the Jammu & Kashmir police. There may have been lot many incidents which may have never been registered hence the figures cannot be termed as exhaustive, but simply a trend of crime incidents prevalent across the state.

### **Review of Literature**

Social scientists, Psychologists, Sociologists, Criminologists and other behavioural scientists have undertaken a good number of studies across different societies to understand the extremities of crime in a society. Some of studies undertaken in the field of crime and society have been reviewed to shape the present study with better, broader and easier understating.

Given the size of the Indian population the rate of incidence of crime in Indian society is quite higher when compared to other less populated counties. Dreze and Khera (2000) <sup>[6]</sup> analyzed the criminal incidents in Indian society on gender basis and observed that poverty and urbanization has got nothing to do with the criminal incidents related with murder, education makes a moderating influence on the criminal incidents and the male-female ratio, as the districts with higher male-female ration has lower murder rates. The authors studied the gender based aspects like, demographic weights, violence induced due to preference for males, patriarchy and sex. There is no single factor which may contribute to the increase in the incidence of crime in society.

In the Indian society, Zan, Zar and Zameen (1988) <sup>[7]</sup> are being as the contributing reasons for crime in society. Preference for a male child contributes to the infanticide (Tandon & Sharma; 2006) <sup>[8]</sup>. Family background of an individual plays a very pivotal role in regulating the behavior of an individual. In Indian social setup, it has been observed people belonging to a particular caste, family group or peer group are more motivated to the crime. Of the 144 criminal incidents related to murder convicts in Central India, (David; 1961) <sup>[9]</sup> found that in 84 percent cases convicts belong to the same caste.

Reporting incidents of crime to police is equally a subject of a separate discussion. It has been observed that a good number of criminal incidents actually never come to the fore for the want of reporting. Kilpatrick et al., (1987) <sup>[10]</sup> undertook a survey of 391 adult females about their lifetime criminal victimization experience and the researchers observed that 75% respondents admitted of being victimized by crime but only 41.4% of the incidents were actually reported. The researchers further observed that reporting a crime incidents generally depends upon the type of crime. The authors found that burglary has maximum 82.4% reporting rate, while as the sexual assaults has only 7.1% reporting rate.

Kelly (2000) <sup>[11]</sup> undertook a study to assess the correlation between the inequality and crime in US society. The author analyzed the crime data retrieved from the FBI for urban counties and observed that there is a considerable difference between the crime associated with the property and the violent crime. The authors found that inequality has no correlation with the property related crimes, but shows a strong relation with the violent crimes. Economic theories recognize criminal incidents with the social

standing of an individual, which depends upon the time spent by an individual in making legitimate earnings by working in the market and the earnings made by indulging in criminal activities (Chiu and Madden; 1998) <sup>[12]</sup>. Unemployment or underemployment is equally a reason which contributes to the incidence of crime in society (Freeman; 1982) <sup>[13]</sup>, as earnings of an individual play a very significant part in controlling and regulating the behavior of an individual (Witte & Tauchen; 1994) <sup>[14]</sup>, which has a profound impact over the participation of an individual in to criminal acts.

Patterson (1991) <sup>[15]</sup> studied the community crime rates in relation to absolute and relative poverty. The researcher observed that absolute poverty and neighborhood crime has a strong correlation, which may be also termed as conditional given the type of crime committed. Informal control over the social members is important to regulate their behavior. Identified poverty, ethnic heterogeneity and residential mobility (Kornhauser; 1978) <sup>[16]</sup> are the three important factors which downplays with exercising control by communities over their members. Stability of family is equally important (Sampson; 1987) <sup>[17]</sup> to control the members and it is the social disorganization, wherein inequality becomes the reason for crime mostly because of poverty. Blau and Blau (1982) <sup>[18]</sup> in their study established a strong correlation between income inequality and homicide rate especially in urban or metropolitan areas.

A good number of researchers have also made attempts to seek the correlation between the age and the crime. Society at large is well aware of the juvenile delinquency, this phase or period of life is also being seen as a transition period from adolescence to adulthood and the youngsters in this age group are being seen driven and dragging more pleasure in doing nasty things. As per the FBI report of 1980, of the 21.1% of the arrests made in city and 7.8% from rural areas were under 18. The same report also figured that 19.75% of the total male arrests and 27.19% of the total female arrests were under 18 (FBI 1981, p. 199) <sup>[19]</sup>.

Iyer et al. (2011) <sup>[20]</sup> in their study, while analyzing the correlation between the incidents of crime against women and the growing participation in politics, found that the increased incidences of crime against women are actually due to the increase in the number of crime incidences reported and not due to the increase in the crime against women. The researchers termed this kind of trend in society as a welcome step, as this is more about drawing awareness among people towards reporting all such criminal incidents which deserved to be brought to justice. Upadhyay (2001) <sup>[21]</sup> in his study about the prevalence of crime in India observed that in 1998 nearly 6.8 million criminal incidents were registered across the country, of which 5.7 million cases were pending in the courts and only 15.8% cases were completed of 37.4% cases were convicted.

Ghosh (2006) <sup>[22]</sup> in his study about crime, examined the correlation between the elections and the crime in Indian social setup. The author has made a significant observation that there is a decline in the incidence of property and violent crime during the election year. The researcher opines, that during the election year the incumbent politicians in the process to appease his/her vote bank exert more pressure to improve the law and order situation, hence results into decline in crime incidents. However, the author argues that there is an increase in the incidence of crime during the early years of elected incumbent politician, which gradually decreases towards the election year.

## Results and Discussion

Given the nature of data and the type of analysis made, no specialized data analysis tool was employed. Expressions like, additions, subtraction, division, drawing percentage, etc. were mostly performed by using MS excel. The percentage has been mostly drawn up to one decimal place, however, wherever warranted same has been drawn up to two decimal places. Crime growth has been calculated on the basis of annual corresponding growth during each subsequent year and then finally average annual growth has been calculated accordingly by using the following mathematical tool



ACG- Annual Corresponding Growth,

$$ACG = \frac{\text{End Value} - \text{First Value}}{\text{First Value}} \times 100$$

**Table-1 Tabulated distribution of administrative districts with population size and number of police stations in each district**

S.No	Name of the District	Population Size (% Share)	No of Police Stations (% Share)	Cumulative Growth of Police Stations	Avg Population covered under each P/S	Geographical area of District in Sq Km (Avg Area under each PS)
01	Jammu	1526406 (12.16)	25 (12.62)	25	61056	3097 (124)
02	Srinagar	1269751 (10.11)	28 (14.14)	53	45348	2228 (79)
03	Anantnag	1070144 (8.52)	09 (4.54)	62	118904	3984 (442)
04	Baramulla	1015503 (8.09)	11 (5.55)	73	92318	4588 (417)
05	Kupwara	875564 (6.97)	17 (8.58)	90	51503	2389 (140)
06	Badgam	735753 (5.86)	08 (5.86)	98	91969	1371 (171)
07	Rajouri	619266 (4.93)	10 (5.05)	108	61926	2630 (263)
08	Kathua	615711 (4.90)	08 (4.04)	116	76963	2651 (331)
09	Pulwama	570060 (4.54)	05 (2.52)	121	114012	1398 (279)
10	Udhampur	555357 (4.42)	10 (5.05)	131	55535	4550 (455)
11	Punch	476820 (3.79)	06 (3.03)	137	79470	1674 (279)
12	Kulgam	422786 (3.36)	06 (3.03)	143	70464	1067 (177)
13	Doda	409576 (3.26)	06 (3.03)	149	68262	11691 (1948)
14	Bandipore	385099 (3.06)	08 (4.04)	157	48137	398 (50)
15	Samba	318611 (2.53)	06 (3.03)	163	53101	904 (150)
16	Reasi	314714 (2.50)	08 (4.04)	171	39339	1719 (214)
17	Ganderbal	297003 (2.36)	07 (3.53)	178	42429	259 (37)
18	Ramban	283313 (2.25)	07 (3.53)	185	40473	1329 (189)
19	Shupiyan	265960 (2.11)	03 (1.51)	188	88653	613 (204)
20	Kishtwar	231037 (1.84)	05 (2.52)	193	46207	1644 (328)
21	Leh	147104 (1.17)	03 (1.51)	196	49034	45110 (15036)
22	Kargil	143388 (1.14)	02 (1.01)	198	71694	14036 (7018)
		12548926	198		63378	101387 (512)

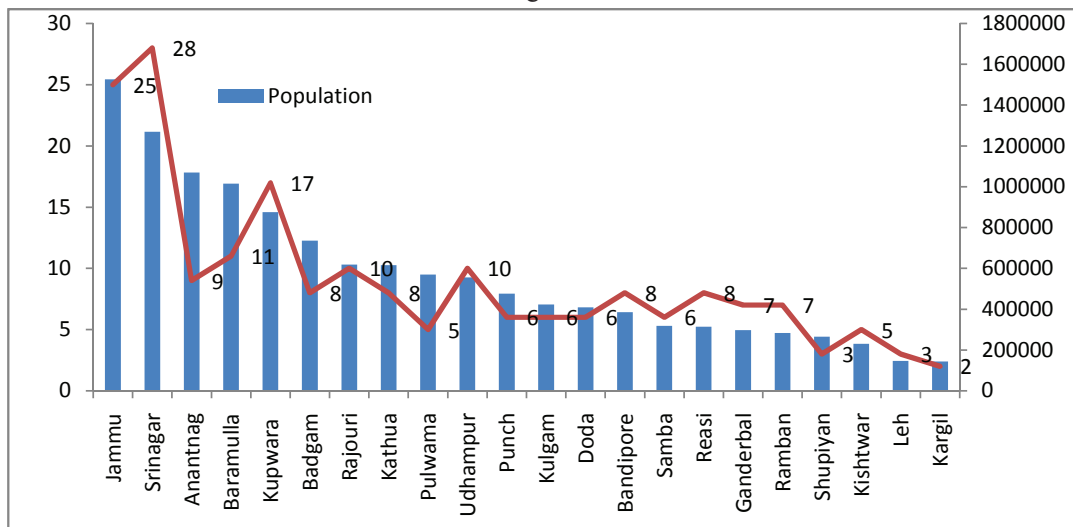
Source: Registrar General of India, Ministry of Home Affairs, Govt of India

The state of Jammu & Kashmir is divided into 22 district headquarters, spread over 101387 square kilometers. District Leh is the largest district of the state, spread over an area of 45110 sq km and the

district Ganderbal is the smallest of all districts, spread over 259 Sq Km. In terms of population Jammu is the largest district having a population of 15.26 million and the district Kargil has the minimum 1.43 lakh population. In terms of area, on average, each police station in Jammu & Kashmir state covers 512 sq km of area. 37 sq km is the minimum area covered by police stations in district Ganderbal, while as 15036 sq km is the maximum area covered by each police station in district Leh.

In terms of population, Jammu and Srinagar are the two largest districts having a population share of 12.16% and 10.11%, respectively, while as Leh and Kargil are the two districts having minimum 1.17% and 1.14% population share percentage.

Figure-2



*District wise distribution of Police Stations in Jammu & Kashmir*

Give the size of the population, it is always imperative to have a proportionate number of police stations in each civil or police district of any place, but most of the time it is being observed that there is a disproportionate distribution of police stations, leading to difficulty in addressing the crime issues of the general masses. The Srinagar and the Jammu apart from being two district headquarters are also the two capital headquarters of the Jammu & Kashmir state, known as summer and winter capitals of the state. Srinagar is the largest district having the maximum 28 (14.14%) police stations, serving the population of nearly 12.69 lakh across the district. District Srinagar is closely followed by the Jammu with 25 (12.62%) police stations, serving 15.26 lakh people across the district. Together, these two summer and winter capital districts of the state have 26.76% share of the total state police stations across the state. District Kargil has the minimum 2 (1.01%) police stations serving 1.47 lakh population of the district.

In terms of population and police station density, on average, each police station across the state serves over 63 thousand people. District Anantnag has the maximum density of population and police stations with each police station serving nearly 1.18 lakh population and the district Reasi has the lowest density with each police station on average serving nearly 39 thousand people.

Table-2 DISTRICT WISE REGISTRATION OF CRIMINAL INCIDENTS FOR THE YEAR 2005 TO 2014 IN RESPECT OF J&amp;K STATE

S. No	Police District	No of police stations	2005	2006 (ACG%)	2007 (ACG%)	2008 (ACG%)	2009 (ACG%)	2010 (ACG%)	2011 (ACG%)	2012 (ACG%)	2013 (ACG%)	2014 (ACG%)	Avg ACG%	Total Cases (%share)	Avg Incidents Per PS	AVG Incidents PA
01	Srinagar	28	3565	3255 (-8.6)	3105 (-4.6)	2939 (-5.3)	3401 (15.7)	2880 (-15.3)	3029 (5.1)	2920 (-3.5)	3007 (2.9)	2877 (-4.3)	-1.7	30978 (12.57)	1106	3097
02	Jammu	25	3276	3436 (4.8)	3516 (2.3)	4056 (15.3)	4011 (-1.1)	4266 (6.3)	4383 (2.7)	4432 (1.1)	4759 (7.3)	4419 (-7.1)	3.1	40554 (16.46)	1622	4055
03	Kupwara	17	1301	1267 (-2.6)	1248 (-1.4)	776 (-37.8)	835 (7.6)	1766 (111.4)	2020 (14.3)	2087 (3.3)	1983 (-4.9)	1991 (0.4)	9.0	15274 (6.20)	898	1527
04	Baramulla	11	1965	2002 (1.8)	1771 (-11.5)	1373 (-22.4)	1713 (24.7)	1105 (-35.4)	1233 (11.5)	1347 (9.2)	1555 (15.4)	1191 (-23.4)	-3.0	15255 (6.19)	1386	1525
05	Rajouri	10	1221	1422 (16.4)	1592 (11.9)	1379 (-13.3)	1255 (-8.99)	1501 (19.6)	1936 (28.9)	1970 (1.7)	1869 (-5.1)	1792 (-4.1)	4.7	15937 (6.46)	1593	1593
06	Udhampur	10	1140	1062 (-6.8)	1015 (-4.4)	902 (-11.1)	1026 (13.7)	1109 (8.0)	1135 (2.34)	1152 (1.4)	1206 (4.6)	1201 (-0.4)	0.7	10948 (4.44)	1094	1094
07	Anantnag	09	1881	1731 (-7.9)	1489 (-13.9)	1321 (-11.2)	1471 (11.3)	1435 (-2.4)	1707 (18.9)	1594 (-6.6)	1519 (-4.7)	1388 (-8.6)	-2.5	15536 (6.30)	1726	1553
08	Badgam	08	1066	1323 (24.1)	1544 (16.7)	1592 (3.1)	1503 (-5.5)	1548 (2.9)	1380 (10.8)	1282 (-7.1)	1266 (-1.24)	1055 (-16.6)	2.7	13559 (5.50)	1694	1355
09	Bandipora	08	-	-	-	550	526 (-4.3)	602 (14.4)	613 (1.8)	569 (-7.1)	679 (19.3)	674 (-0.7)	3.3	4213 (1.71)	526	601
10	Kathua	08	1127	1265 (12.2)	1351 (6.7)	1160 (-14.1)	1110 (-4.3)	1160 (4.5)	1310 (12.9)	1414 (7.9)	1323 (-6.4)	1350 (2.0)	2.1	12570 (5.10)	1571	1257
11	Reasi	08	323	332 (2.7)	333 (0.3)	519 (55.8)	621 (19.6)	729 (17.3)	676 (-7.2)	799 (18.1)	787 (-1.5)	861 (9.4)	11.4	5980 (2.42)	747	598
12	Ganderbal	07	593	610 (2.8)	701 (14.9)	383 (-45.3)	474 (23.7)	380 (-19.8)	550 (44.7)	557 (1.2)	569 (2.1)	492 (-13.5)	1.0	5309 (2.15)	758	530
13	Ramban	07	677	769 (13.5)	780 (1.4)	706 (-9.4)	711 (0.7)	681 (-4.2)	808 (18.6)	813 (0.6)	781 (-3.9)	725 (-7.1)	1.0	7451 (3.02)	1064	745
14	Doda	06	741	976 (32.1)	995 (1.9)	652 (-34.4)	828 (26.9)	952 (14.9)	744 (-21.8)	782 (5.10)	902 (15.3)	758 (-16.2)	2.3	8330 (3.38)	1383	833
15	Kulgam	06	727	803 (10.4)	764 (-4.8)	654 (-14.3)	802 (22.6)	792 (-1.2)	757 (-4.4)	848 (12.0)	1000 (17.9)	926 (-7.4)	3.0	8073 (3.27)	1345	807

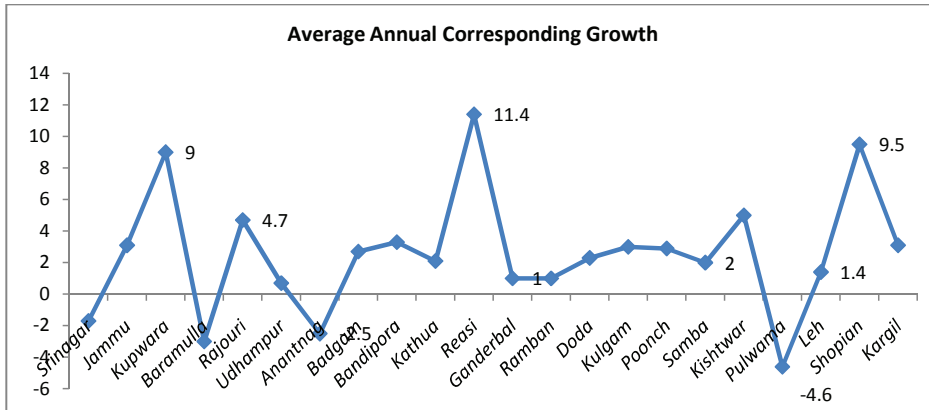
16	Poonch	06	675	748 (10.8)	782 (4.5)	829 (6.0)	782 (-5.6)	975 (24.6)	843 (-13.5)	865 (2.6)	827 (-4.3)	863 (4.3)	2.9	8189 (3.32)	1394	818
17	Samba	06	571	643 (12.6)	748 (16.3)	718 (-4.0)	725 (0.9)	720 (-0.6)	804 (11.6)	780 (-2.9)	803 (2.9)	674 (-16.0)	2.0	7186 (2.91)	1197	718
18	Kishtwar	05	-	-	-	300	299 (-0.3)	358 (19.7)	440 (22.9)	438 (-0.4)	415 (-5.2)	409 (-1.4)	5.0	2659 (1.07)	531	379
19	Pulwama	05	1531	1482 (-3.2)	1470 (-0.8)	884 (-39.8)	1008 (14.0)	1211 (20.1)	1080 (-10.8)	932 (-13.7)	861 (-7.6)	824 (-4.2)	-4.6	11283 (4.58)	2256	1128
20	Leh	03	207	236 (14.0)	366 (55.0)	302 (-17.4)	189 (-37.4)	182 (-3.7)	255 (40.1)	190 (-25.4)	161 (-15.2)	169 (4.96)	1.4	2257 (0.91)	752	225
21	Shopian	03	-	-	-	342	507 (48.2)	647 (27.6)	669 (3.4)	572 (-14.4)	401 (-29.8)	530 (32.1)	9.5	3668 (1.48)	1222	524
22	Kargil	02	97	130 (34.0)	92 (-29.2)	114 (23.9)	110 (-3.5)	144 (30.9)	122 (-15.2)	109 (-10.6)	116 (6.4)	110 (-5.1)	3.1	1144 (0.46)	572	114
	Total. (%age Share)*	198	22684 (9.20)*	23492 (3.5)	23662 (0.7)	22451 (-5.1)	23907 (6.4)	25143 (5.1)	26494 (5.3)	26452 (-0.1)	26789 (1.2)	25279 (-5.6)	1.1	246353	1244	24635
				(9.53)*	(9.60)*	(9.11)*	(9.70)	(10.20)*	(10.75)*	(10.73)*	(10.87)*	(10.26)				

PA-Per Annum, PS-Police Station, ACG%- Annual Corresponding Growth Percentage, Avg.- Average

Source: - <http://crimebranchjkipolice.nic.in/docs/stat1.pdf>

During the period 2005 to 2014 a total 246353 criminal incidents were registered across the state, with an average annual crime incidents of 24635. Accordingly, on average, the crime in Jammu & Kashmir state during the period of study has on average recorded an annual corresponding growth of 1.1%. It is quite interesting to learn that Anantnag, Baramulla, Pulwama and Srinagar, districts recorded decline in crime and reflected a negative average annual growth. District headquarter Pulwama has recorded the maximum average Annual Corresponding Decline (ACD) in the crime by -4.6%, followed by Baramulla with -3%, Anantnag with -2.5% and Srinagar -1.7%.

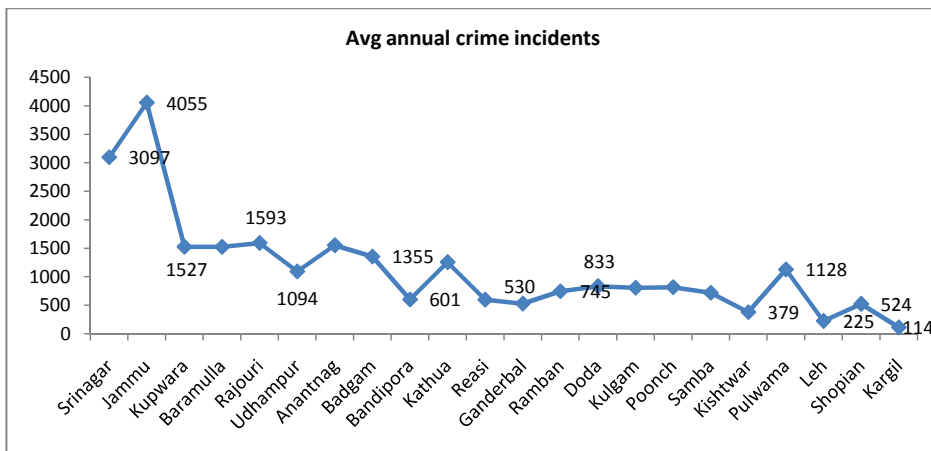
Figure-3



Average annual corresponding growth at district level in Jammu & Kashmir

The district Reasi has recorded the maximum 11.45% average annual corresponding growth in the crime incidents during the period of study, which is closely followed by district Shopian and Kupwara with an average annual corresponding growth in crime incidents by 9.5% and 9% respectively.

Figure-4

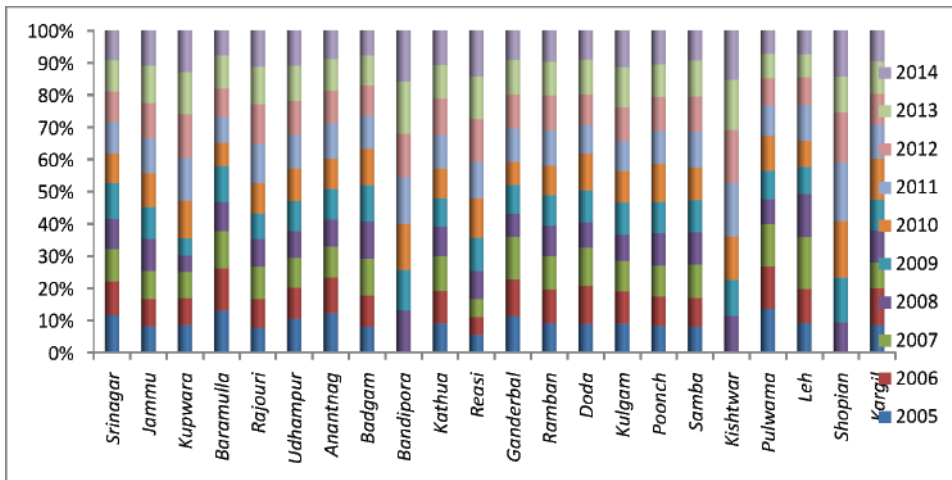


Average annual crime incidents across different districts of Jammu & Kashmir

As per 2011 census, Jammu is the most populous district of the state, having a population of 1526406 persons, constituting 12.16% of the total state population. Accordingly, Srinagar has a population of 1269751 persons, constituting 10.11% share of the total state population. Jammu & Srinagar are the

two largest districts, which on average annually recorded 4055 & 3097 criminal incidents respectively. During the period of study, in Jammu district alone a total of 40554 (16.46%) incidents of crime has been recorded, while as, in the Srinagar district, a total of 30978 criminal incidents has been recorded during the decade, constituting 12.57% of the total criminal incidents of the state. Jammu & Srinagar districts are followed by Rajouri, Anantnag and Kupwara with a total number of crime incidents (15937, 6.46%), (15536, 6.30%) & (15274, 6.20%) respectively. Kishtwar, Leh and Kargil have recorded the lowest crime incidents share percentage in the state during the last decade, viz. (395, 1.07%), Leh (225, 0.97%) and Kargil (114, 0.46%) respectively.

Figure-5



District wise annual distribution of crime registrations

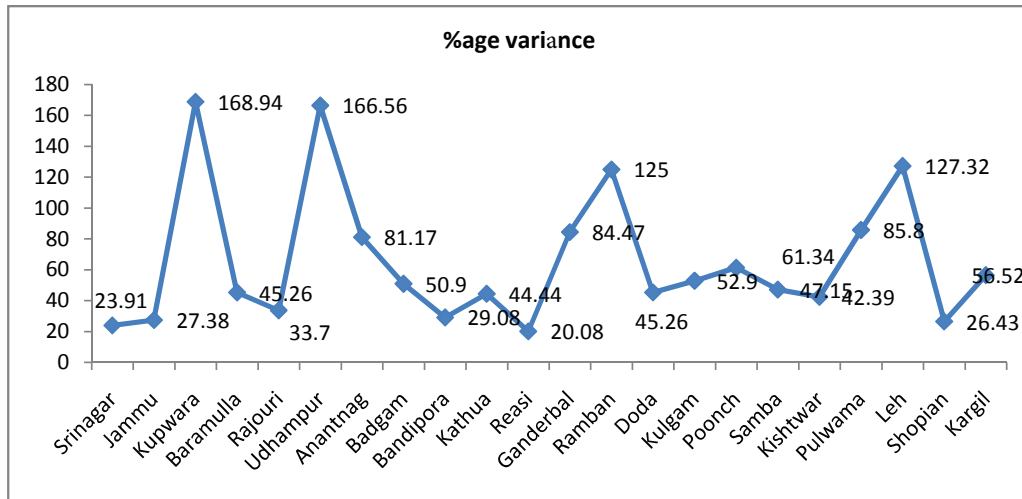
To understand the percentage variation between the lowest and highest number of criminal incidents recorded in the state as a whole and against each individual district will give an actual insight of the crime extremities and their percentage difference during the decade. On the whole in the state of Jammu & Kashmir a minimum 22451 crime incidents were recorded in the year 2008, while as, a maximum 26789 incidents were recorded in the year 2013, which makes the overall crime difference during the decade by 19.32%. Accordingly, the crime difference recorded in other civil administrative districts remained as

**Table-3 Extremities of crime range in each district during the period of study and their percentage difference**

District	Min	Max	% diff	District	Min	Max	% diff
Srinagar	2877	3565	23.91	Ganderbal	380	701	84.47
Jammu	1110	1414	27.38	Ramban	24	54	125
Kupwara	776	2087	168.94	Doda	3276	4759	45.26
Baramulla	3276	4759	45.26	Kulgam	654	1000	52.9
Rajouri	902	1206	33.7	Poonch	1221	1970	61.34
Udhampur	323	861	166.56	Samba	299	440	47.15

Anantnag	1105	2002	81.17	Kishtwar	1321	1881	42.39
Badgam	1055	1592	50.9	Pulwama	824	1531	85.80
Bandipora	526	679	29.08	Leh	161	366	127.32
Kathua	675	975	44.44	Shopian	401	507	26.43
Reasi	677	813	20.08	Kargil	92	144	56.52

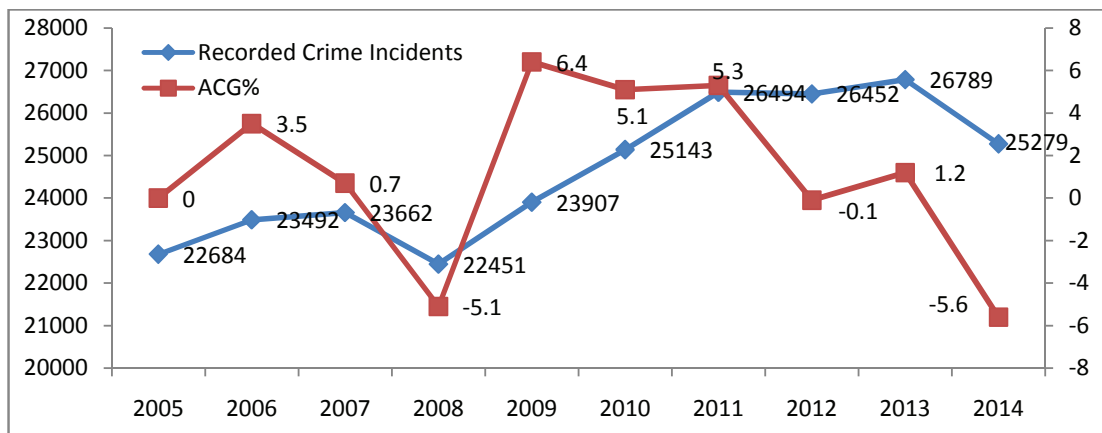
Figure-6



Percentage variance of crime in each district between the lowest and highest number of criminal incidents recorded

The crime record data against district, Kishtwar, Shopian and Bandipora is not available for the entire decade, for the fact that these district headquarters were carved out in the year 2007 started functioning as independent administrative units from April 01, 2007.

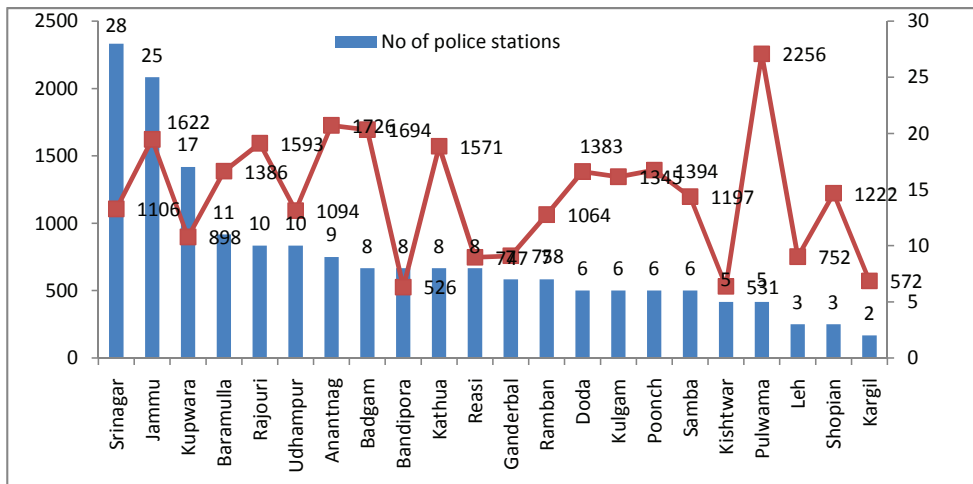
Figure-7



Annual corresponding percentage growth of crime incidents across the state

There is no significant difference in percentage share of crime incidents recorded on an annual basis. Of the total crime incidents registered during the decade, a minimum of 9.11% cases were registered during the year 2008 and a maximum of 10.87% were registered during the year 2013.

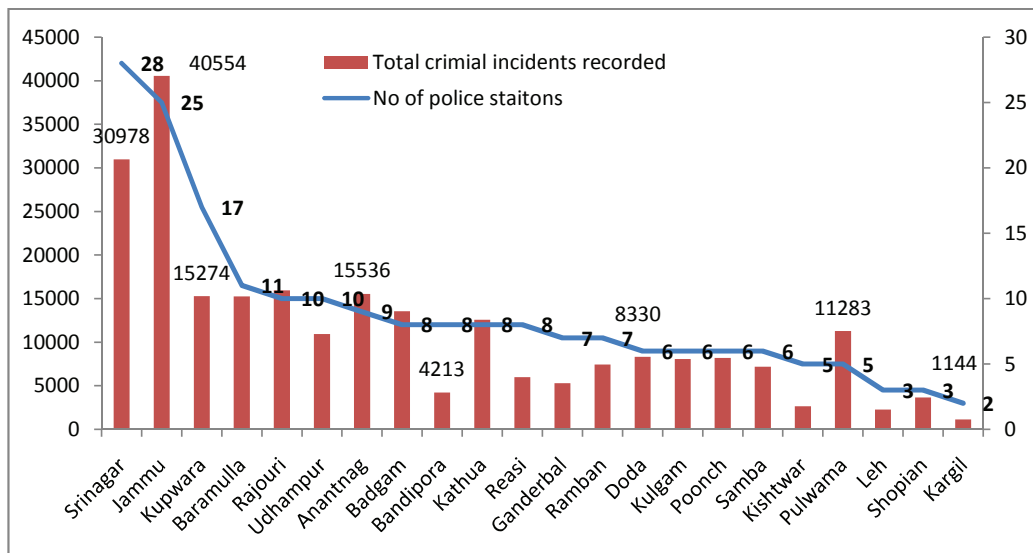
Figure-8



Distribution of police stations across each district and the average crime incidents registered in each police station

On average 1244 crime incidents stand registered in each police station of the Jammu and Kashmir during the last ten years, which impliedly also means that on average 124 crime incidents are registered in each police in Jammu and Kashmir every year.

Figure-9



Total crime incidents registered across each district of the state



Reporting incidents of crime are also somewhere influenced by the number of police stations in particular vicinity, greater the number of police stations in a particular area, the greater is the number of incidents reported in them. The above graphical presentation gives a clear idea about the crime incidents reported in each district in relation to the number of police stations in each district. We can see a considerable decrease in the number of incidents of crime with the decrease in the number of police stations in each district, as we move from Srinagar to Kargil. Besides, compared to urban areas like district Srinagar and district Jammu there are far less incidence of crime in rural areas viz. other districts.

## DISCUSSION

There is always a considerable difference between the amount of crime taking place in the society and the actual number of criminal incidents coming to the fore. It has been always observed that people, especially from rural and sub-urban areas do not normally turn up to register criminal incidents taking place in and around them, as they fear that the investigating agencies may grill them more than the real culprits. Besides, the other factors which lead to not to register, the First Information Report with the police is due to lack of awareness among the people, lacking zeal in seeking justice, less faith in justice delivery system, corruption, nepotism, fear for their lives and many more factors add to it, whereby people prefer to choose silence than raising the voice to seeking justice.

Given the fact, that the figures reflected by no means are exhaustive, as such the findings can be simply termed as the prevailing trend of crime across the different district headquarters in the state of Jammu and Kashmir.

Jammu & Srinagar district headquarters have recorded the maximum number of criminal incidents during the period of study. This can be owed to the fact that people putting up in urban areas are more aware of their rights and are equally keen to bring things to justice. People in urban areas have and show more faith in the judiciary, who, unlike their rural cousins, do not fear in registering criminal cases against the offenders. This somewhere reflects the need that people living in the suburbs and other rural areas are required to be connected to the mainstream, rather to organized sector of the country by bridging the gap between the police and the public, preferably by having frequent police public durbars at all levels, wherein the role of the police has to play a more proactive role.

The minimum average annual crime incidents were recorded in Kargil (114, 0.46%), Leh (225, 0.91%) and Kishtwar (379, 1.53%) can be owed to the fact, that these three district headquarters are the three least populous districts of the Jammu & Kashmir state. Also, the district Leh and Kargil have the largest geographical area, while as in district Kishtwar, population is thinly scattered across villages and rural areas which are still languishing for road and power connectivity. Besides, these are the district headquarters with large geographical areas, but have a minimum number of police stations. It is quite obvious, that people residing in far off areas may be finding it difficult to register their complaints in their concerned police stations. Besides, there is every need to follow each individual complaint by the complainant personally, otherwise there is every danger that all such criminal investigations may get hushed up and influenced by the offenders itself.

Unlike the rest of the India, wherein Indian Penal Code (IPC) <sup>[23]</sup> is the main criminal code to deal with all types of criminal aspects, the state of Jammu & Kashmir has its own Criminal Procedure Code (CrPC), known as Ranbir Penal code (RPC). RPC runs on the parallel lines to that of the IPC and was introduced in the state during the reign of Dogra Ruler Ranbir Singh in the year 1932 <sup>[24]</sup>, hence borrowed the name as Ranbir Penal Code. Jammu & Kashmir is the only state in India, which has its own CrPC, while as the rest of the country follows IPC, while dealing with the matters pertaining to crime.

During the year 2014, a total of 25279 criminal incidents were recorded in the state of Jammu and Kashmir, which also means that on average 2022 criminal incidents were registered per million population of the state. While as, 1909 criminal incidents were registered per million population of the country during the year 2012<sup>[25]</sup>. Compared to 2.6% annual corresponding crime growth at the national level during the year 2012, the state of Jammu and Kashmir during the same period recorded negative growth of -0.1%, while as the average annual corresponding crime growth in the state during the decade remained 1.1%.

At the national level, on average, 1 police personnel provide security to 550 persons, while as in the state of Jammu and Kashmir there are 83000 police personnel providing security to a population of 12.5 million, in the ratio of 1:151, which is better by 364%, when compared to national level police public security ratio<sup>[26]</sup>. There is a considerable difference in the registration of crime incidents between the urban and rural areas and this can simply be due to better awareness among urbanities towards protecting their interests and belief in judiciary in bringing things to justice.

It is an established fact that growth in registration of crime incidents does not necessarily mean that there is an increase in the crime incidents in society. Increased registration of crime is mostly due to growing awareness among people towards the crime and its registration. It has been observed that people do not report the incidents of crime mostly because they fear for their life and don't want to lose their self-respect and self-esteem. Besides, most of the criminal incidents occur, because people find crime as a way to defend their honour and dignity and again to protect this honour and dignity people do not most of the time reports such incidents to law enforcing agencies. Accordingly, any increase in the incidence of crime is primarily influenced by the increased reporting of crime incidents and not due to the rise of crime levels in society

## CONCLUSION

Crime incidents in the state of Jammu & Kashmir have not shown any substantial growth during the period 2005 to 2014. Since there is no steep or sharp increase in the incidence of crime in Jammu and Kashmir during the last decade, as such, it can be empathically said that the difference in the incidence of crime and their registration in the state goes almost parallel. Though it is a subject of further investigation as what percentage of crime is registered across India in general and Jammu & Kashmir in particular. Although, the incidence of crime in Jammu & Kashmir is slightly higher than the average national crime incidence rate per million population, but there is a need to understand the fact that the state of Jammu and Kashmir is reeling under social unrest since 1989, due to the secessionist movement, although mostly confined to the Kashmir valley, but surely may have influenced the incidence of crime across the state.

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# Children of Incarcerated Parents in India: The Unchartered Territory



Neelam Sukhramani, Suhara Hassan,  
Sigamani Panneer

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## Abstract

The article highlights the need to focus on a group of children which have till date been practically invisible not only on account of escaping the attention of policy makers but also because of the challenges involved in accessing them. In the absence of any data base on children of incarcerated parents and specifically those children who live outside the prison, their vulnerabilities stand unexplored in the Indian context. Examining the literature available on the subject in other contexts, the article highlights the predisposition of children of incarcerated parents to negative social, emotional and educational outcomes and thus emphasizes the need to explore this hitherto unchartered territory.

## Key words

Children of Incarcerated Parents, Child Protection

## Introduction

While international literature abounds with the predisposition of children of incarcerated persons to negative educational, emotional, social outcomes, there is scant attention paid to the vulnerabilities of this group in India. In the absence of any database on this group, the formulation of policy and interventions is challenging. In an era where the rights of prisoners have assumed centre stage, we would like to draw focus on the rights of the families of prisoners and more specifically the children. The title, *Collateral Convicts: Children of Incarcerated Parents* given to a report compiled based on the Day of General Discussion at the UN Committee on the Rights of the Child (2011) reverberates the situation and feelings of children who have been viewed in several quarters as the invisible victims of crime and the penal system (Robertson 2012). In the same discussion, a written submission by the Action for Prisoners' families laments that children interacting with the criminal justice system (for example when visiting incarcerated parents) are 'reduced to a security risk assessment, (while) within the broader community they are silent or silenced' (Robertson 2012).

Children of incarcerated persons are bifurcated into two categories, those who are permitted to stay with the mother in the prison and those that are outside the prison. In India, prison being a state subject, the age upto which children can stay with their parents inside the prison varies between two and six years, according to the state laws (Sarangi 2012). Notwithstanding the age differentiation, children living with their mothers inside the prisons have been the subject of debate and discussion in India primarily from the standpoint of the suitability of this arrangement in the light of the children being in their formative years and having specific physical, social and emotional needs. What has however eluded discussion in the Indian context is the children of incarcerated persons who are living outside the prison. There is no access to information regarding the number of these children, their demographic details, their educational status, health condition and neither is there any evidence based work to talk about the challenges and situation of these children. In fact, in the written submission made for India by HAQ: Centre for Child Rights to the Quaker UN Office for a discussion on the children of incarcerated parents, the statistics were provided only with respect to the children living with their mothers in the prison (Robertson 2012). The importance of this data gets further highlighted by the findings of Sarangi's (2012) study with women prisoners and their children in five States and two Union Territories where 3380 women prisoners stated that they had children living outside the prisons. If we were to seek responses from the male prisoners who constitute 95.8 per cent of the prison population as per the Prison Statistics in India 2014, the number of prison inmates reported to be having children living outside prison would increase significantly. Despite the large number of children that are likely to be affected by this situation, the issue has escaped attention at all levels except the judiciary who in a landmark order cited below highlighted the State's legal responsibility to provide for the care, protection and development of these children.

## Landmark Judgment

In the case of *Birndavan Sharma vs. State* CrI Apl. 927/2002 (High Court of Delhi), the appellant was convicted of murdering his wife and was sentenced to life imprisonment leaving three minor children behind. The Delhi High Court in its order passed through Justice Mukul Mudgal and Justice Reva Khetarpal lamented the precarious situation in which children are landed where they become the victims of not only the offence but also the punishment. In its order passed on August 2007, it stated:

.....The children are now left destitute and virtually orphaned and thus are the victims not only of the crime but also the punishment for the crime. The children are therefore victims of a system which does not provide any apparent relief to such unfortunate and totally innocent victims of a crime and its aftermath.....The court cannot be a hapless and mute spectator in such cases and must device within our legal system, some procedure to help such hapless victims. (2007: 2528)

The order further invoked the responsibility of the government to device some institutional mechanism to support such victims of a crime. The court also highlighted the vulnerability of such children to delinquency primarily on account of their situational circumstances. Constitutionally, the order stated, the State owes a responsibility to those children under Article 21 and Article 39(e) & (f). The right to live with dignity is as much applicable to the children as much as it is to the adult citizens. India's ratification of the UN Convention of the Rights of the Child on December 11, 1992 also obligates the State through its various articles to ensure the right of every child to survival, protection, development and participation in his/her own life. The order gave directions to the Ministry of Social Justice and Empowerment and Ministry of Women and Child Development to consider the framing of a scheme and provision of funds for such purposes.

Notwithstanding the State's obligation towards children of incarcerated parents, there is little empirical evidence to support the direction of this intervention in India. Contrarily, in response to the increasing crime rates, this subject has attracted the attention of several researchers. Review of the evidence from these contexts points towards not only the potential vulnerability of this group but works as a reflector on the probable areas where research needs to be initiated which could in turn guide the policy and practice domains.

### **International evidences on potential impact of parental incarceration**

Research in differential contexts has shown that children of incarcerated parents are more likely to be predisposed to negative emotional, educational and behavioural outcomes as compared to other children of their age. The impact is not only restricted to childhood but also extends to adult life experiences.

In a study in Hong Kong (Yau & Chung 2014), children in the age group of 9 to 11 years reported problems in having to conceal their parent's imprisonment. Caregivers in this study reported that children tended to suppress their emotions which definitely pose higher risk for psychological distress. Miller (2006) building up a case for effective practice interventions states that children on account of the shame that they experience as well as the societal stigma are likely to withdraw from meaningful relationships to escape rejection. Alongside the stigma within local communities, the Irish study (Moore, Convey and Scraton 2011) has identified children experiencing bullying in school, and while some teachers were sympathetic, others labelled the child, expecting them to be badly behaved.

In case of younger children facing parental incarceration, children's attachment security is threatened because of parent-child separation, confusing communication about parental absence, restricted contact with incarcerated parents and unstable care giving arrangements. Insecure attachments are more likely to develop in case of maternal incarceration. Further the relationship of the child with the incarcerated parent prior to incarceration is also a determinant of the nature of impact (Murray & Murray 2010).

Estimated effects of paternal incarceration have been found to be higher than other forms of father's absence. In a study that examined the relationship between parental incarceration and developmental outcomes for 3000 urban children at age five, the results indicated significant increases in aggressive behaviour and some evidence of increased attention problems (Geller, Cooper, Garfinkel, Schwartz-Soicher & Mincy 2009). In a study that used extensive statistical modelling to compare the differences of impact between children's exposure to incarceration specific experiences and general environmental risk factors, it emerged that the former place children at higher risk for maladjustment. Incarceration specific experiences included witnessing mother's arrest, children no longer living with one of his/her siblings, etc. Maladjustment manifested itself in anxiety and depression symptoms as well as externalized behavior patterns (Dallaire, Zeman & Thrash 2015). In addition, in an earlier study by Dallaire & Wilson (2010), the findings revealed that witnessing parent's criminal activity, arrest and sentencing also resulted in problems with receptive vocabulary which may make success at school difficult. It is believed that exposure to these stressful life events interferes with attention, regulatory and executive control processes. A Danish Case study (Scharff-Smith & Jakobsen 2011) has explored this dimension and observes that the arrest, the police arrival and searching of home can be experienced as frightening and make an impression in the children.

Aaron & Dallaire (2010) suggest that recent parental incarceration influenced family conflict, which, along with family victimization predicted children's delinquency. Their research also suggests that negative effects of having an incarcerated parent continue to be seen in the adjustment of children even years after the parent returns home. Experiencing the incarceration of a parent during adolescence may be particularly disruptive. Miller & Barnes (2015) exploring the relationship between paternal

incarceration during childhood and adult outcomes later in life, found that such children were at risk for poor mental health, educational underachievement and receipt of public assistance in later life. The findings from Canadian context also suggest higher vulnerability to criminal behaviour among children separated due to maternal incarceration (Cunningham & Baker 2003).

Children of incarcerated parents have reported symptoms of post-traumatic stress syndrome analogous to children whose parents have died (Breen, 1995 cited in Miller (2006, p. 478). In regions which are endemically conflict ridden children have also been found to be more prone to develop Post Traumatic Stress Disorder (PTSD) symptoms and hyper activity problems (Shehadeh, Loots, Vanderfaellie & Derluyn 2015). Child trauma symptomology is significantly elevated in families impacted by parental incarceration compared to a similar economically disadvantaged group of single caregiver families (Arditti & Savla 2015: 557).

The vulnerability of fragile families to incarceration stands the risk of inequality perpetuating itself intergenerationally (Wildeman & Western 2010). La Vigne, Davies & Brazzell (2008) through a review of empirical literature suggest that children of incarcerated persons are likely to face greater financial hardship as compared to other children. Temporary school phobias have also been reported along with below average academic performance. The research review also suggested exposure to considerable stigmatization that may lead to lowered self esteem or anger, defiance and retaliation for those stigmatizing them.

The above review significantly indicates that parental incarceration influences the developmental outcomes for children across different ages and the impact may also be felt in adulthood. Some of the variables that may influence the potential impact are the age of the child at the time of incarceration, the living arrangement of the child post incarceration, the opportunity available for the children to meet the incarcerated parent, the economic condition of the family prior to incarceration, the presence or absence of the other parent and the sensitivity of significant others towards the children of incarcerated parents. In the backdrop of India's contextual uniqueness and the evidence garnered from the international context, the next section attempts to examine the potential challenges that children of incarcerated parents might face in India.

## **Implications for the Indian Context**

Considering the value accorded to the family in the Indian context, the absence of one or both parents on account of incarceration is likely to cause significant disequilibrium in the lives of the children. Coupled with this is the secrecy that surrounds matters pertaining to the family which has the potential to limit the expressiveness on part of the children along with making them feel burdened about protecting the family honour.

In cases where both parents are absent either because of dual incarceration or because of death of the other parent or because of the family being a single parent family, the compulsion to stay within the house that might be owned by the family may also pose security risks for the children. When the parent is not in physical proximity, protecting the rights of these children is another challenge because children in their own capacity are very seldom in a position to claim their rights (Martynowicz, Holden and Gauders 2011).

The absence of societal empathy could pose serious challenges for the family and in turn for the children. Phillips & Gates (2010) in the western context put it in a clearer way, saying children with parents in prison are not stigmatized because of a trait they personally possess, but because of their affiliation with parents who are stigmatized.

People who are ascribed lower social status are subjected to social distancing. At an intimate level, these children may be regarded as unsuitable friends, playmates, or teammates (Phillips & Gates 2010). We do not know whether these children are partly blaming themselves for the condition in which they and their families are in.

Unfortunately the Indian context also experiences instances of intergenerational animosity on account of which the safety of the parent cannot be assured even after being released from the prison. The feeling of insecurity in such cases can be exasperated among children.

It is also unclear about how younger children make sense of the absence of their parent. Undoubtedly family circumstances and the relationship of the child with the parent prior to incarceration could determine the potential impact both on the family and the child.

Schooling and academic circumstances of these children are extremely threatened due to the incarceration of their parent. Incarceration may mean shifting of residence leading to discontinuance of school. The financial burden posed due to incarceration could also result in school drop out with the necessity to take on gainful employment.

Contrasted with other contexts, in a country where social security mechanisms are either absent or procedurally too complex to access, the patterns of existence of these children is a complete enigma.

These explorations are worthy of consideration in a country where the prison population is more than four lakh (National Crime Record Bureau 2015) and the social safety nets are yet too few. Isolated initiatives such as the Scheme for Financial Sustenance, Education & Welfare of Children of Incarcerated Parents was launched by the Government of Delhi in furtherance to the directions of the High Court of Delhi in the case of Birmdwan Sharma vs State(Crl. Apl. 927/2002 ).The State of Kerala is probably the only other state to offer educational scholarship to children of incarcerated parents. SOCARE (Society's Care for Indigent) runs homes for children whose parents are serving long prison sentences in three places in Karnataka. India Vision Foundation is another organization which works with children living outside the prisons while their parents are incarcerated with an objective to save the next victim. These initiatives are pioneering and are the outcome of passionate efforts by their respective founders. The magnitude of the issue and the complexities associated with it demand more evidence based models of practice and definitely more comprehensive policy level recognition. In fact their explicit recognition within the category of children in need of care and protection in the Juvenile Justice (Care and Protection of Children) Act, 2015 would help to bring them within the net of child protection interventions.

Considering all the international evidences, and the possible impact of parental incarceration, we need to devise a strong research agenda to explore and understand the issues of these children and specifically those who are living outside the prison. Interdisciplinary collaboration in developing empirical evidence base can bring the attention of policy makers to discuss this invisible category. We have models from the west, wherein the disciplines of correction, sociology, social work and psychology are working together and creating a platform for discussion for the best interest of these children.

To conclude, it may not be improper to state that having ratified the United Nations Convention on the Rights of the Child, 1989, India is also duty bound to ensure the rights of children of incarcerated parents which are subsumed within Article 2,3,9 and 19.

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# A Study on the Changing Proportion of Un-Natural Deaths in Punjab with Special Reference to Road Accidents (1996-2013)



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Dr. Simranjeet Singh Bains

## Abstract

In the last two decades India has emerged as a vibrant economy, witnessing rapid urbanization, migration of people and changing pattern of consumption, readily adopting mechanization and experiencing revolution in technology in all spheres of life. The intensity of motorized vehicles has risen by many folds without a matching investment in infrastructure development. Road safety has figured as a sensitive and vital issue. Road accidents being part of un-natural deaths constitute the highest proportion in total accidental deaths. The present study examines the nature, composition and rate of road accidents in Punjab. District-wise density of vehicular traffic, density of road network and intensity of road accidental deaths has been ascertained to have a microscopic view of acute problem in the state of Punjab and the results are presented using Histograms and Pie charts. Over the period of analysis, magnitude of vehicular traffic has risen by about sixteen times, which is the cause of high intensity of road accidents. Rise in earnings of middle class clubbed with easy availability of automobile loan from financial institutions was the primary cause of substantial increase in number of vehicles on roads. The quantum of road accidents has increased by 5.45 times in a period of three decades (1980-2010). The highest spurt was in the last decade. The magnitude of accidental deaths and persons injured has also risen tremendously by 7.5 times and 4.9 times respectively in Punjab. Ludhiana topped the list in terms of magnitude of road accidents, road accidental deaths and accidental injuries on roads. It is followed by S.A.S. Nagar and Patiala.

## Key words

vehicular traffic, road accident, highways, road safety

## Introduction

In the last two decades India has emerged as a vibrant economy, witnessing alterations in the socio-demographic, economic and political way of life. There has been a rising income trend especially among the middle income classes. This has led to rapid urbanization, migration of people and changing pattern of consumption. They are readily adopting mechanization and experiencing revolution

in technology in all spheres of life. The intensity of motorized vehicles has risen by many folds without a matching investment in infrastructure development. Road safety has figured as the most sensitive and crucial issue while addressing the problem of accidental deaths in the country. Road accidents form the highest proportion of accidental deaths. There are both natural and un-natural causes of accidental deaths. The natural causes (Avalanche, Cold and Exposure, Cyclone/Tornado, Starvation/Thirst, Earthquake, Epidemic, Flood, Heat Stroke, Landslide, Lightning, Torrential Rains etc.) constitute a meagre part to the extent of 5 to 6 percent of total accidental deaths. The different causes of unnatural deaths are Air-Crash, Collapse of Structure (House Building, Dam, Bridge), Drowning Boat, Electrocution, Explosion, Falls (Fall from Height, Fall into Pit/Manhole), Factory/Machine Accidents, Fire (Fireworks/Crackers, Short-Circuit, Gas Cylinder/Stove Burst), Fire-Arms, Sudden Deaths (Heart Attacks, Epileptic Fits/Giddiness, Abortions/Child Birth, Influence of Alcohol), Killed by Mines or quarry disaster, Poisoning (Food Poisoning/Accidental Intake of Insecticide, Spurious/poisonous liquor, Leakage of poisonous gases, Snake Bite/Animal Bite), Stampede, Suffocation, Traffic Accidents (Road, Rail-Road Accidents, Other Railway Accidents).

Road accidents (figuring among the unnatural causes of accidental deaths) usually refer to traffic accidents in which there is a motor vehicle collision with another vehicle, person, animal, obstruction like trees or poles etc. Such an accident leads to injury, death, disability, vehicle damage and property damage. It is a worldwide phenomenon which causes human and financial loss and the cost has to be borne by the society and the individuals involved. The World Health Organization (WHO) uses the term road traffic injury to describe the vehicle collisions. A 2004 report by WHO states that road traffic injuries are a major problem which needs effective and sustainable efforts for prevention. The report forecasts that if new initiatives are not taken to combat this problem worldwide road traffic injuries would rise by 65 percent by 2020 and by 80 percent in low-income and middle- income countries.

There is an urgent need to take appropriate actions to put a check on the deteriorating road safety measures. Road safety measures include appropriate engineering aspect of both roads and vehicles, as well as provision of efficient health and hospital services. In India the problem is unique and catastrophic with little precedence of such a situation in highly motorized countries. Here the road space is jointly shared by cars, buses, three-wheelers, rickshaws, animal carts, scooters, bicycles and pedestrians. Highways pass through rural areas with high density of population and there is an absence of parallel road links for slow and non-motorized traffic. Illegal encroachments on the road spaces are a further nuisance which causes many road accidents. Driving licenses are issued without effective scrutiny and examination. India's road traffic injuries pose a huge public health and development problem killing almost around 1.4 lakh people, injuring or disabling about 4.7 lakh persons and damaging 1.6 crore vehicles a year (NCRB, 2013).

The rate of deaths due to road accidents (number of deaths in road accidents / number road accidents \* 100) is highest in the state of Punjab to the extent of 72.6 after Meghalaya, Mizoram and Nagaland whereas it is only 31.0 in all India basis. (NCRB, 2013) There has been a spurt in number of vehicles as Punjab figures among the states having high density of registered vehicles.

The present study is an attempt

1. To examine the magnitude, proportion and growth of road accidental deaths in the state of Punjab during a period of eighteen years (1996-2013).
2. To ascertain the intensity of deaths in road accidents by different types of vehicles in the state of Punjab (1996-2013).

3. To determine the density of vehicular traffic, density of road network and intensity of road accidental deaths in different districts of Punjab.

## METHODOLOGY

The data on total accidental deaths, road accidental deaths, in the state of Punjab from 1996 to 2013 is subjected to primary and graphical analysis. To examine nature of road accidents during the period of analysis, the different type of vehicles and their ownership (whether private or government) is scrutinized. Pie chart is used to express the share of different categories of vehicles in road accidental deaths. To study the composition of road accidents, the year wise proportion of road accidents in total accidents since 1996 is reckoned and expressed through histogram. Further in order to ascertain rate of road accidental deaths, magnitude of road accidental deaths per lakh of population in different years in Punjab, is computed. The rate of accidental deaths defined as the number of deaths per lakh inhabitants is universally taken as a realistic indicator since it balances the effect of growth in population. To analyse the growth of road accidental deaths under various types of vehicles, average annual compound growth rates were computed using the following formula.

$$Y = a b^t e^u$$

$$Y = \text{Yearly expenditure on Police}$$

$$t = \text{Time period}$$

$$u = \text{Stochastic term}$$

a and b are constants which were estimated by principle of least square using following formula

$$\log b = \frac{n \sum t \log y - (\sum t)(\log y)}{n \sum t^2 - (\sum t)^2}$$

$$\log a = \frac{\sum \log y}{n} - (\log b) \frac{\sum t}{n}$$

$$\text{Average C.G.R.} = (b - 1) 100$$

Lastly district-wise density of vehicular traffic, density of road network and intensity of road accidental deaths is examined to have a microscopic view of acute problem in the state of Punjab.

## Sources of Data

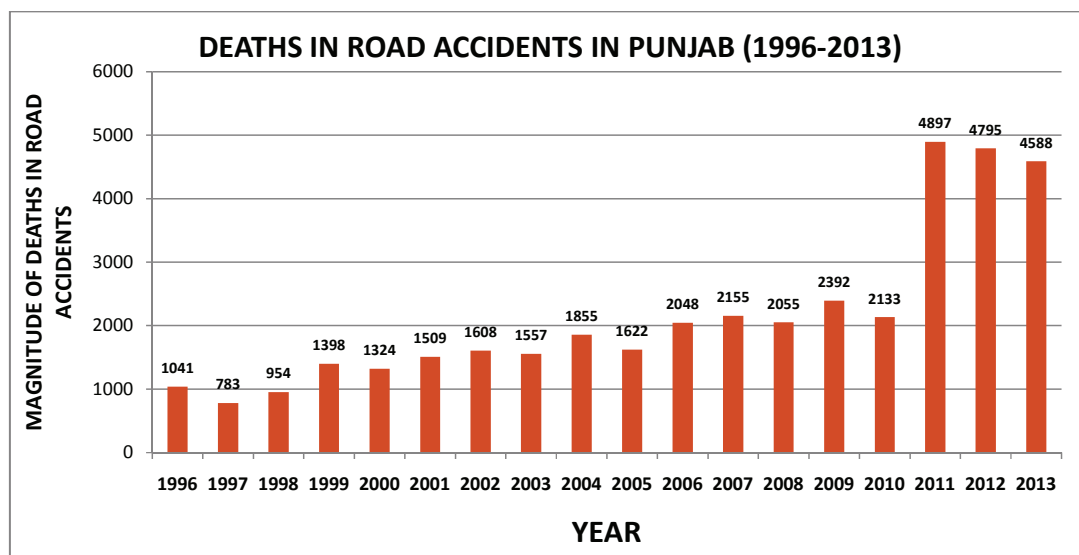
	Type of Data	Source
i)	Year wise accidental deaths and road accidental deaths in Punjab from 1996 to 2013.	Various annual issues of Accidental Deaths and Suicides in India, National Crime Records Bureau, GOI from 1996 to 2013.
ii)	Mid-year population in Punjab from 1996 to 2013.	Directorate Census Operation, Punjab from 1991 to 2011.
iii)	Vehicle-wise road accidental deaths in Punjab in 1996 and 2013.	Various annual issues of Accidental Deaths and Suicides in India, National Crime Records Bureau, GOI from 1996 to 2013.
iv)	Decade-wise magnitude of registered vehicles in Punjab (1980-2010)	State Transport Commissioner, Chandigarh.

v)	Decade-wise magnitude of road accidents, persons killed and persons injured in Punjab (1980-2010)	Director General Police, Crime, Punjab Police Headquarters, Chandigarh.
vi)	District-wise road length, roads per sq. K.M. of area, roads per lakh of population	Chief Engineer Office, P.W.D. (B&R), Punjab.

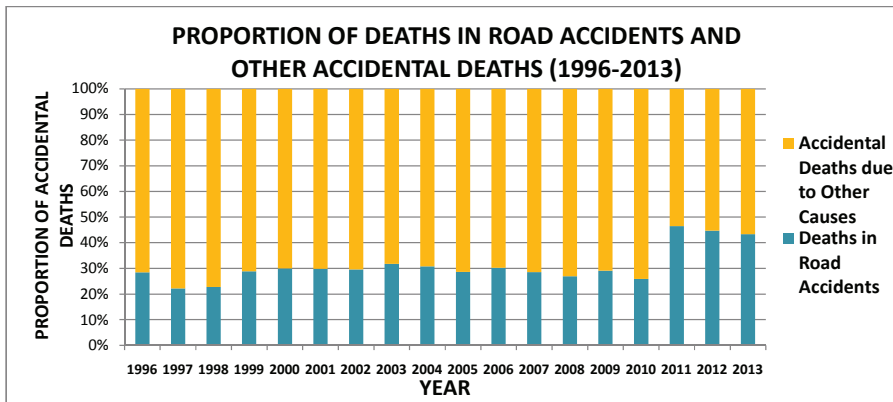
## DISCUSSION

Clearly shown in Table 1 given in Appendix, that road accidental deaths in the state of Punjab has shown a positive trend, irrespective of the awareness campaigns launched by the state traffic police department, efforts towards development and management of road infrastructure, provision for safer vehicles by automobile companies, provision of health and hospital services etc.

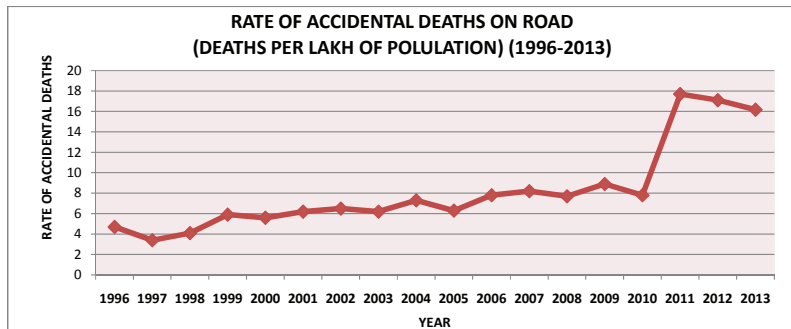
The magnitude of total road accidental deaths during the period of eighteen years (1996-2013) is 38714 has risen annually from 1041 in 1996 to 4588 in 2013 at an average annual compound growth rate (AACGR) of 9.50 percent, highest being in 2011 to the extent of 4897. The average annual road accidental deaths during the period of analysis were 2151. The highest spurt was in the year 2011 partly due increase in number of vehicles on the road and partly due to the absence of a coordinated official policy to control the problem. It has followed an upward trend with minor fluctuations in certain years.



The proportion of accidental deaths on road to total accidental deaths has varied between 22.2 to 46.5 during the period of analysis (1996-2013), with average annual proportion of 31.0 and highest being in the year 2011. The proportion has also shown a positive trend with a sharp rise in last three years, from 2011 onwards. Total accidental deaths in Punjab by all causes have risen from 3657 in 1996 to 10577 in 2013 at AACGR of 6.79 percent, highest being in 2012 to the extent of 10721. The highest contribution to these deaths has been due to road accidental deaths.



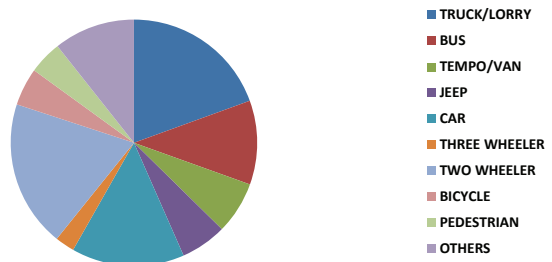
The rising intensity of the problem can be judged from the rate of accidental deaths. The rate of accidental deaths indicates the number of deaths per lakh inhabitants, which is universally taken as a realistic indicator since it balances the effect of growth in population. The rate of accidental deaths has increased from 4.7 in 1996 to 16.2 in 2013, ranging between 3.4 in 1997 to 17.7 in 2011. There is an urgent need to recognize the worsening road safety situation in order to take appropriate action. Road traffic injury prevention and mitigation should be given the same attention and scale of resources that are currently being channelized towards other predominant health issues, if increasing human loss and injury on the roads, with their devastating human impact and large economic cost to the society are to be avoided. (Report GOI, 2007)



Clearly shown in Table 2 given in Appendix, average proportion of road accidental deaths caused by governmental owned vehicles during the period of analysis (1996-2013) is 5.4 percent. The highest contribution was in the year 2002 to the extent of 20 percent.

Among the different type of vehicles, the average annual quantum of fatality in road accidents is maximum by trucks and lorries to the extent of 424, constituting 19.7 percent of total casualties followed by the category of two wheelers (419), cars (323) and buses (240) with 19.5%, 15% and 11.2% respectively. The minimum average annual quantum of fatality in road accidents is on three wheelers constituting

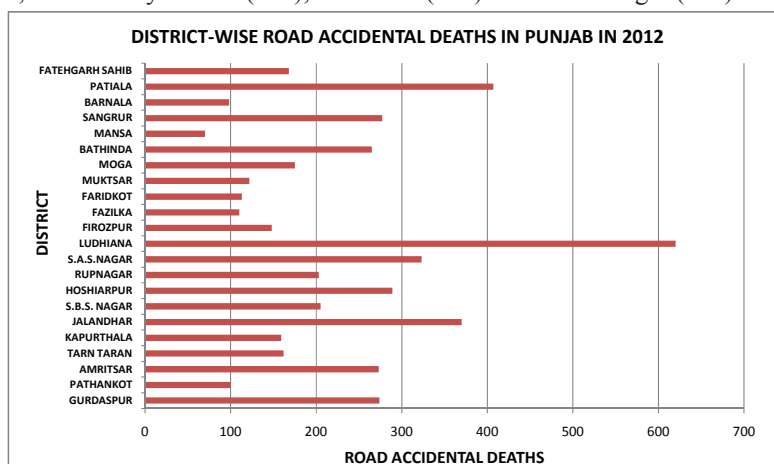
**AVERAGE ANNUAL ROAD ACCIDENTAL DEATHS BY DIFFERENT TYPE OF VEHICLE (1996-2013)**



2.6 percent of total casualties. The reason responsible for this is that they are comparatively less in number and moreover the speed limit is regulated as mostly it is used for commercial purposes, within cities and towns. The average annual fatality of pedestrians is also sufficiently large to the extent of 95 experienced an AACGR of 8.37 percent during the period of analysis, due to lack of provision for subways near educational institutions and other office-market centers. Moreover the provision of footpaths and zebra crossings in urban and sub-urban areas are bleakly maintained. The AACGR, indicating the growth in road accidental deaths is highest in case of cars to the extent of 15.9 percent during a period of eighteen years (1996-2013), followed by others (15.54%) and two wheelers (14.36%).

Clearly shown in Table 3 given in Appendix, that over a period of three decades magnitude of vehicular traffic has risen by about sixteen times, from 360154 in 1980 to 5711715 in 2010, which is the cause of high intensity of road accidents. Rise in earnings of middle class clubbed with easy availability of automobile loan from financial institutions was the primary cause of substantial increase in number of vehicles on roads. The quantum of road accidents has increased by 5.45 times from 1010 in 1980 to 5507 in 2010. The highest spurt was in the last decade (2000-2010) to the extent of 1631. Lack of investment in road infrastructure and accessibility of fast moving vehicles constitutes the reason for voluminous road accidents. The magnitude of accidental deaths and persons injured has also risen tremendously by 7.5 times (from 472 in 1980 to 3544 in 2010) and 4.9 times (from 836 in 1980 to 4171 in 2010) respectively in Punjab.

Clearly shown in Table 4 given in Appendix, among the various districts of Punjab, Ludhiana had the highest number of vehicular traffic to the extent of 1336866, followed by Jalandhar (908604) and Amritsar (803007), which collectively forms 48.7 percent of total vehicular traffic of Punjab as in March, 2012. These three districts have comparatively made ample growth in secondary and tertiary sectors of state economy. The rise in income earnings due to business activity and sharp rise in landed property were reasons responsible for voluminous increase in number of vehicles in the districts. Ludhiana topped the list in terms of magnitude of road accidents, road accidental deaths and accidental injuries on roads. It is followed by S.A.S. Nagar and Patiala. The magnitude of road accidental deaths in Ludhiana was 620 in the year 2012, followed by Patiala (407), Jalandhar (370) and S.A.S.Nagar (323).



Density of road network is maximum in Ludhiana to the extent of 268 kilometers per square K.M. of area followed by Jalandhar (221 K.M.) and Amritsar (204 K.M.). Length of roads per lakh of population is maximum in Muktsar to the extent of 452 K.M. followed by S.B.S. Nagar (400 K.M.) and Rupnagar (376 K.M.). These are the districts with comparatively low density of population. The State

must prioritize to invest appropriately in road infrastructure, especially the national and state highways in order to reduce road accidents and fatalities there on.

The National Highways are partly maintained by National Highway Authority of India and partly by Public Works Department (B&R) in Punjab. National Highways must be intensely scrutinized for any engineering defects and they must be rectified at the earliest possible. Roads maintained by Public Works Department (B&R) in Punjab accounts for 67258 kilometers as on March, 2012. Among them National Highways are 1738 K.M., whereas Provincial Highways are 65520 K.M.

## SUGGESTIONS AND POLICY IMPLICATIONS

1. There is a pressing need to regulate heavy vehicles including trucks, lorries, buses, tempo and vans which are primarily used for commercial purposes as they collectively form 38 percent of total casualties during the period under study. Their speed limits, cargo carrying limit (overloading) and passenger carrying limit must be regulated and strictly followed. It is also suggested that yellow, orange and such bright colours should be used on heavy vehicles because the bright colours make them more visible when parked under low light conditions. It is more relevant in countries like ours, where the parking and lighting regulations are scantily followed. White coloured cars are most visible and had least chances to be involved in an accident. (Monosh University, Accident Research Centre of Melbourne).
2. There is need to identify black spots and correct the defects (engineering and architectural aspects) of road infrastructure. Moreover the inferior construction of roads is causing deterioration of safety standards for heavy and fast moving vehicular traffic. A large number of fatal accidents can be avoided by appropriately curing such defects by concerned authorities at the earliest.
3. Large number of road accidents happen at night, so it is required not to keep traffic lights in standby mode at nights. Furthermore directional and warning boards must be installed with neon lights and blinkers, so as to enhance their visibility at nights.
4. It is also found in the study that intensity of road accidents is more in big cities (Ludhiana topped the list in terms of magnitude of road accidents, road accidental deaths and accidental injuries on roads. It is followed by S.A.S. Nagar, Patiala and Jalandhar.) The traffic rules and regulations must be rigorously implemented using modern techniques of surveillance and offenders must be stringently penalized. Universal enforcement of use of seat belts at both front and rear seats while driving should be made. Standardized helmets for two wheelers should be compulsory both for driver and pillion rider.
5. Dedicated traffic police force is vital for patrolling and managing traffic in cities and towns. A special highway police force must be constituted to enforce road safety on the National Highways. This issue was discussed by a specialized committee, which was of the view that borrowing personnel from the state police force was not a satisfactory arrangement as there was no guarantee of continuity, capability or uniformity in dealing with traffic management and road safety issues on National Highways. The committee noted that the Central Government was examining the possibility of employing the Central Industrial Security Force (CISF) for the purpose (Report, 2007).
6. Authorities issuing driving licenses should follow proper procedure of written, physical and medical examination at the time of issuing fresh and renewed licenses. It should be made mandatory to have a periodical checkup of vehicles, which also must pass basic environment standards.
7. There is a need to develop and efficiently run a dedicated emergency medical service at least at all



national and state highways to extend required medical assistance in case of any mishappening. It will substantially reduce fatalities and large economic cost to society.

8. Dangerous television advertisements encouraging high speed and risky stunts should be banned as youngsters are likely to imitate the driving stunts performed by experts. Arrangement for sharing knowledge of traffic rules, regulation and their adherence should be given in educational institutions as they (youth) constitutes the major proportion in casualties. Children below a certain age must not be allowed to cycle on busy roads. Moreover bright coloured cycles with reflectors both in front and back, should be encouraged as they are less prone to accidents in low light.
9. The menace of stray dogs and cows should be addressed as they possess a big hazard, especially to vehicles at night time.
10. It is also proposed to launch a drive against drunken driving with stringent penalties and moreover liquor shops must be removed from national/state highways.

## CONCLUSION

It is concluded from above discussion that there has been a spurt in intensity of road accidental deaths and injuries during the period of analysis (1996-2013) in the state of Punjab, causing a rise in proportion of road accidental deaths in total accidental deaths by 24.3 percent. Higher growth in density of vehicular traffic as compared to growth in the density of roads is the primary cause of the problem. Moreover the quality of roads (engineering, architecture and constructional aspects) is not appropriate, causing deterioration of safety standards for heavy and fast moving vehicular traffic. Among the different type of vehicles, the fatality rate is maximum by trucks and lorries due to overloading, driving under the influence of intoxicants and lengthy working schedule. Ludhiana topped the list in terms of magnitude of road accidents, road accidental deaths and accidental injuries on roads. It is followed by S.A.S. Nagar and Patiala.

The situation is alarming and only worsening at a very high rate (above nine percent) in Punjab and there are no signs of it being controlled in near future. It is expected that at given growth of earnings of large populace, the density of vehicular traffic is yet to climb peak rate, indicating worsening of the problem. There is an urgent need to synchronize various agencies involved in road infrastructure development and vehicular traffic management. A comprehensive approach including all the efforts stated above must be executed with utmost dedication to check burgeoning road accidental deaths.

## APPENDIX

**TABLE 1: MAGNITUDE, PROPORTION AND RATE OF ROAD ACCIDENTAL DEATHS IN PUNJAB (1996-2013)**

YEAR	MID YEAR POPULATION (IN LAKHS)	TOTAL ACCIDENTAL DEATHS	TOTAL ACCIDENTAL DEATHS ON ROAD	RATE OF ACCIDENTAL DEATHS ON ROAD	PROPORTION OF ACCIDENTAL DEATHS ON ROAD IN TOTAL ACCIDENTAL DEATHS
1996	219.2	3657	1041	4.7	28.5
1997	228.1	3531	783	3.4	22.2
1998	231.0	4169	954	4.1	22.8
1999	233.7	4829	1398	5.9	28.9

2000	236.2	4409	1324	5.6	30.0
2001	242.9	5050	1509	6.2	29.8
2002	247.7	5440	1608	6.5	29.6
2003	251.1	4885	1557	6.2	31.8
2004	254.4	6013	1855	7.3	30.8
2005	257.6	5648	1622	6.3	28.7
2006	260.8	6786	2048	7.8	30.2
2007	263.9	7546	2155	8.2	28.6
2008	266.9	7638	2055	7.7	26.9
2009	269.8	8208	2392	8.9	29.1
2010	272.7	8216	2133	7.8	25.9
2011	277.0	10532	4897	17.7	46.5
2012	280.8	10721	4795	17.1	44.7
2013	283.8	10577	4588	16.2	43.4
<b>TOTAL</b>	<b>4577.6</b>	<b>117855</b>	<b>38714</b>	<b>147.6</b>	<b>558.4</b>
<b>AVERAGE (1996-2013)</b>	<b>254.3</b>	<b>6547</b>	<b>2151</b>	<b>8.2</b>	<b>31.0</b>
<b>AACGR (1996-2013)</b>	<b>1.44</b>	<b>6.79</b>	<b>9.50</b>	<b>8.01</b>	<b>2.54</b>

Source: Accidental Deaths and Suicides in India, National Crime Record Bureau, Ministry of Home, G.O.I.

Note: The rate of accidental deaths defined as the number of deaths per lakh inhabitants is universally taken as a realistic indicator since it balances the effect of growth in population.

**TABLE 2: ACCIDENTAL DEATHS ON ROAD IN PUNJAB (TYPE OF VEHICLE)  
(1996 – 2013)**

Type of Vehicle	Truck/ Lorry	Bus	Tempo/ Van	Jeep	Car	Three Wheeler	Two Wheeler	Bicycle	Pedestrian	Others	Govt. vehicle	Total	Proportion of Deaths on Govt. Vehicles in Total
1996	606	142	121	125	79	62	170	73	68	92	153	1041	14.7
1997	142	120	58	59	74	16	175	33	30	76	44	783	5.6
1998	230	122	68	46	84	20	157	50	62	15	63	954	6.6
1999	372	235	94	80	102	28	197	57	54	179	140	1398	10.0
2000	342	185	126	90	127	29	174	55	60	136	70	1324	5.3
2001	319	258	139	117	166	51	237	62	70	90	155	1509	10.3
2002	324	245	147	121	235	140	3	239	71	83	322	1608	20.0
2003	393	214	126	98	221	57	270	55	40	83	92	1557	5.9

<b>2004</b>	355	228	158	88	265	39	407	94	71	150	<b>135</b>	<b>1855</b>	<b>7.3</b>
<b>2005</b>	321	215	156	84	286	53	1	414	1	93	<b>111</b>	<b>1622</b>	<b>6.8</b>
<b>2006</b>	380	200	112	101	311	52	473	81	76	262	<b>58</b>	<b>2048</b>	<b>2.8</b>
<b>2007</b>	366	238	136	106	347	43	483	93	113	230	<b>77</b>	<b>2155</b>	<b>3.6</b>
<b>2008</b>	337	210	90	92	293	55	487	86	131	274	<b>50</b>	<b>2055</b>	<b>2.4</b>
<b>2009</b>	388	217	122	129	399	45	607	85	156	244	<b>57</b>	<b>2392</b>	<b>2.4</b>
<b>2010</b>	272	196	149	201	370	63	500	69	78	334	<b>40</b>	<b>2133</b>	<b>1.9</b>
<b>2011</b>	838	441	299	318	817	70	1176	154	242	542	<b>154</b>	<b>4897</b>	<b>3.1</b>
<b>2012</b>	798	382	311	279	777	98	1149	143	252	606	<b>171</b>	<b>4795</b>	<b>3.6</b>
<b>2013</b>	841	472	290	221	864	96	883	101	132	688	<b>218</b>	<b>4588</b>	<b>4.8</b>
<b>Total</b>	<b>7624</b>	<b>4320</b>	<b>2702</b>	<b>2355</b>	<b>5817</b>	<b>1017</b>	<b>7549</b>	<b>1944</b>	<b>1707</b>	<b>4177</b>	<b>2110</b>	<small>38714</small>	<b>5.4</b>
<b>Average</b>	<b>424</b>	<b>240</b>	<b>150</b>	<b>131</b>	<b>323</b>	<b>56</b>	<b>419</b>	<b>108</b>	<b>95</b>	<b>232</b>	<b>117</b>	<b>2151</b>	<b>5.4</b>
<b>AAC-GR</b>	<b>4.94</b>	<b>5.52</b>	<b>6.42</b>	<b>7.40</b>	<b>15.9</b>	<b>6.21</b>	<b>14.36</b>	<b>5.12</b>	<b>8.37</b>	<b>15.54</b>	<b>0.59</b>	<b>9.50</b>	————
<b>Vehicle-wise Proportion of deaths</b>	<b>19.7</b>	<b>11.2</b>	<b>7.0</b>	<b>6.1</b>	<b>15.0</b>	<b>2.6</b>	<b>19.5</b>	<b>5.0</b>	<b>4.4</b>	<b>10.8</b>	<b>5.4</b>	<b>100.0</b>	

Source: Accidental Deaths and Suicides in India, National Crime Record Bureau, Ministry of Home, G.O.I.

**TABLE 3: MAGNITUDE OF ACCIDENTS, PERSONS KILLED, PERSONS INJURED, (1980-2010)**

<b>YEAR</b>	<b>NUMBER OF REGISTERED VEHICLES</b> *	<b>NUMBER OF ACCIDENTS</b> **	<b>NUMBER OF PERSONS KILLED</b> **	<b>NUMBER OF PERSONS INJURED</b> **
<b>1980</b>	360154	1010	472	836
<b>1990</b>	1329482	1621	1133	1322
<b>2000</b>	2910233	3876	2406	3165
<b>2010</b>	5711715	5507	3544	4171

Source: \* State Transport Commissioner. \*\*Director General of Police, Crime, Punjab.

**TABLE 4: DISTRICT WISE REGISTERED VEHICLES, MAGNITUDE OF ACCIDENTS, PERSONS KILLED, PERSONS INJURED, TOTAL ROAD LENGTH, ROADS PER SQ. K.M. OF AREA AND ROADS PER LAKH OF POPULATION IN PUNJAB AS ON MARCH, 2012**

DISTRICT	NUMBER OF REGISTERED VEHICLES *	NUMBER OF ACCIDENTS**	NUMBER OF PERSONS KILLED **	NUMBER OF PERSONS INJURED **	TOTAL ROAD LENGTH (K.M.) ***	ROADS PER 100 SQ. K.M. OF AREA (K.M.) ***	ROADS PER LAKH OF POPULATION (K.M.) ***
GURDASPUR	294935	322	274	130	4282	120	185
PATHANKOT	9785	140	100	68	1556	-	-
AMRITSAR	803007	353	273	243	5394	204	213
TARN TARAN	77632	173	162	102	3080	126	270
KAPURTHALA	194312	183	159	134	2935	147	291
JALANDHAR	908604	438	370	244	5812	221	264
S.B.S. NAGAR	102824	219	205	100	2471	195	400
HOSHIARPUR	318674	346	289	132	5529	164	347
RUPNAGAR	196112	319	203	218	2591	189	376
S.A.S.NAGAR	98145	541	323	409	2396	219	236
LUDHIANA	1336866	871	620	487	10099	268	286
FIROZPUR	256255	148	148	184	3562	67	173
FAZILKA	5321	105	110	39	2384	-	-
FARIDKOT	205043	134	113	60	1947	133	310
MUKTSAR	65600	150	122	92	4140	158	452
MOGA	106326	217	175	146	3354	151	335
BATHINDA	270364	323	265	193	3824	113	271
MANSA	69244	109	70	90	2339	108	301
SANGRUR	272298	375	277	275	5393	149	322
BARNALA	40733	153	98	85	1746	124	289
PATIALA	510245	664	407	577	5544	172	288
FATEHGARH SAHIB	114483	230	168	73	1970	167	325
PUNJAB	6256808	6513	4931	4081	81808	162	291

Source:\* State Transport Commissioner \*\*Director General of Police Crime (Pb) \*\*\*Chief Engineer P.W.D. (B&R),Punjab.

- Note: 1. Roads maintained by Irrigation Department, Punjab, has not been included as these relates to path of canals/drains.
2. Data pertaining to roads per sq. K.M. of area and roads per lakh of population is not available for the district of Pathankot & Fazilka.

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# The Chimera of Plea Bargaining



Umesh Sharraf

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## Abstract

Plea Bargaining is a pre-trial negotiations between the accused and the prosecution during which the accused agrees to plead guilty in exchange for certain concessions by the prosecution. The main objective is to reduce the risk of undesirable orders for the either side. Another reason behind the concept of 'Plea Bargaining' is the fact that most of the criminal courts are over burdened and hence unable to dispose off the cases on merits. Criminal trial can take day, weeks, months and sometimes years while guilty pleas can be arranged in minutes. In other words, a Plea Bargaining is a deal offered by the prosecution to induce the defendant to plead guilty.

We can safely say that Plea Bargaining is nothing but a contract between the prosecution and the defendant or accused and both the parties are Legally bound by this contract.

## Key words

Investigation, evidence, Prosecution, Criminal law, CrPC.

## Introduction

**T**he strength of any legal system depends on how it responds in all situations, be it times of stress or of peace, moments of progress or of great economic challenge. A legal system that offers answer to all situations is truly a mature legal system. Blueprints for police reforms as well as excellent ideas to improve the criminal justice system have been around for years. Sadly, these ideas have not been turned into a tangible agenda for change and improvement in India. Very often, an idea that has worked in some other environment is sought to be copied without seeking to replicate the environment that made it work in the first place.

It is the investigation process of the police and the evidence that it develops that serves essentially as the 'gateway' to the criminal justice system, as the police initiate most criminal matters that other components of the justice system deal with. The information collection efforts and decisions made during the investigation by police officers are key determinants of whether or not any other elements of the system will ever become involved. The quality and thoroughness of police investigations also affect how prosecutors dispose of them. In this sense, the police directly influence the amount and quality of evidence available for prosecution. The police investigation process also influences the workload and

activities of the court systems. The police investigation process generates many of the legal issues that are raised and adjudicated in courts.

Issues involving police searches, seizures of property, detention, arrest, interrogations, the use of force and the handling of evidence, are critical areas of legal debate that have long histories in the judicial decision-making process. Aspects of each of these issues are integral to the investigation process, and investigative activities both shape and are shaped by legal arguments and outcomes in these areas. Even the court sentencing process is directly impacted by the presence of physical evidence in police investigations.

However, improvements in the productivity of a single element, for example, an increase in police case detection rates through the improved quality of investigation, will increase the workload of other system elements. Increasing workloads without bringing about reforms to handle the additional work may prove to be futile. The inability of one component to take advantage of improvements in another could have negative repercussions on reform programs and could also decrease the confidence of the public in the value of investing more resources in a system that yields counterproductive results.

A new chapter, that is chapter XXIA on 'Plea Bargaining', was introduced in the Criminal Procedure Code through the Criminal Law (Amendment) Act, 2005. Plea Bargaining is applicable in respect of those offences for which punishment is up to a period of 7 years. It does not apply to cases where the offence committed is a 'socio-economic offence' or where the offence is committed against a woman or a child below the age of 14 years. Also, once the court passes an order in the case of 'Plea Bargaining' no appeal shall lie to any court against that order.

## **The Principle of Plea-Bargaining**

Plea Bargaining can be defined as pre-trial negotiations between the accused and the prosecution during which the accused agrees to plead guilty in exchange for certain concessions by the prosecution. The object of Plea Bargaining is to reduce the risk of undesirable orders for the either side. Another reason behind the concept of 'Plea Bargaining' is the fact that most of the criminal courts are over burdened and hence unable to dispose off the cases on merits. Criminal trial can take day, weeks, months and sometimes years while guilty pleas can be arranged in minutes. In other words, a Plea Bargaining is a deal offered by the prosecution to induce the defendant to plead guilty.

Plea Bargaining can be of two types: Charge bargain and sentence bargain. Charge bargain happens when the prosecution allows a defendant to plead guilty to a lesser charge or to only some of the charges framed against him. Prosecution, in most countries, generally has vast discretion in framing charges and therefore they have the option to charge the defendant with the highest charges that are applicable. 'Charge Bargain' gives the accused an opportunity to negotiate with the prosecution and reduce the number of charges that may have framed against him. As far as sentence bargain is concerned, it happens when an accused or defendant is told in advance what his sentence will be if he pleads guilty. A sentence bargain may allow the prosecutor to obtain a conviction in the most serious charge, while assuring the defendant of an acceptable sentence. Therefore we can safely say that Plea Bargaining was meant to be nothing but a contract between the prosecution and the defendant or accused and both the parties are bound by this contract (although the presence of the victim is also required for arriving at the mutually satisfactory disposition as per section 265C

(a) of Cr.P.C., thus theoretically making it a tripartite agreement, in practice the victim goes unheard).

For most defendants the principal benefit of plea-bargaining is receiving a lighter sentence than what might result from taking the case to trial and losing. Another benefit which the defendant gets is that they can save a huge amount of money which they might otherwise spend on advocates. It always takes more time and effort to bring a case to trial than to negotiate and handle a plea-bargain. Incentives for accepting plea-bargaining, as far as judges and prosecutors are concerned are obvious.

More than 90 percent of the criminal cases in America are never tried. The majorities of the individuals who are accused of a crime give up their constitutional rights and plead guilty. In countries such as England and Wales, Victoria, Australia, Plea Bargaining is allowed only to the extent that the prosecutors and defense can agree that the defendant will plead to some charges and the prosecutor shall drop the remainder. The European countries are also slowly legitimizing the concept of plea bargaining, though the Scandinavian countries largely maintain prohibition against the practice.

### **Plea bargaining in India**

To reduce the delay in disposing criminal cases, the 142nd, 154th and the 177th Reports of the Law Commission had recommended the introduction of plea bargaining as an alternative method to deal with huge arrears of criminal cases. This recommendation of the Law Committee also found support in Malimath Committee Report. In its report, the Malimath Committee recommended that a system of plea bargaining be introduced in the Indian Criminal Justice System to facilitate the earlier disposal of criminal cases and to reduce the burden of the courts.

To strengthen its case, the Malimath Committee also pointed out the success of plea bargaining system in USA. Accordingly, the draft Criminal Law (Amendment) Bill, 2003 was introduced in the parliament. The bill attracted enormous public debate. Critics said it was not recognized and against public policy under our criminal justice system. Fears were also raised that police would coerce the accused to accept deals under this system, causing miscarriage of justice. Despite hue and cry, the government found it acceptable and finally section 265-A to 265-L were added in the Code of Criminal Procedure so as to provide for plea bargaining in certain types of criminal cases.

### **"Plea of guilty" and "plea bargaining"**

Prior to the concept of 'plea bargaining' becoming law after the Criminal Law Amendment Act, 2005 came into force on 5th July, 2006, the Ahmedabad High Court had already brought out the distinction between 'plea of guilty' and 'plea bargaining'. The Court had said: "*...but the 'plea bargaining' and the raising of "plea of guilty", both things should not have been treated, as the same and common. Nobody can dispute that "plea bargaining" is not permissible, but at the same time, it cannot be overlooked that raising of "plea of guilty", at the appropriate stage, provided in the statutory procedure for the accused and to show the special and adequate reasons for the discretionary exercise of powers by the trial Court in awarding sentences cannot be admixed or should not be treated the same and similar. Whether, "plea of guilty" really on facts is "plea bargaining" or not is a matter of proof. Every "plea of guilty", which is a part of statutory process in criminal trial, cannot be said to be a "plea bargaining" ipso facto. It is a matter requiring evaluation of factual profile of each accused in criminal trial before reaching a specific conclusion of it being only a "plea bargaining" and not a plea of guilty simpliciter. It must be based upon facts and proof not on fanciful or surmises without necessary factual supporting profile for that.*"<sup>1</sup>

Section 240(2) Cr. P.C . provides that the charge shall then be read and explained to the accused and he shall be asked as to whether he pleads guilty of the offence charged or claims to be tried. Section

<sup>1</sup> State of Gujarat v Natwar Harchandji Thakor, 2005 Cr.L.J. 2957



241 Cr.P.C. provides that if the accused pleads guilty, the Magistrate shall record the plea and may in his discretion convict him thereon. It is not obligatory on the part of the Magistrate to convict him even if the accused pleads guilty, he may proceed with the trial. Every "plea of guilty" during the course of observance of the mandatory procedure prescribed in Cr.P.C. and particularly in Sections 228(2), 240(2), 252 and also in Section 253 for the trial of case by the Magistrates, when plea of guilty is recorded as per the procedure prescribed cannot be said to be a "plea bargaining".

### The changing judicial view on Plea Bargaining

The Supreme Court had in the past time and again blasted the concept of plea bargaining saying that negotiation in criminal cases is not permissible. The Apex Court had held that *it is settled law that on the basis of plea bargaining court cannot dispose of the criminal cases. The court has to decide it on merits. If the accused confesses its guilt, appropriate sentence is required to be implemented. The court further held in the same case that, mere acceptance or admission of the guilt should not be a ground for reduction of sentence. Nor can the accused bargain with the court that as he is pleading guilty the sentence be reduced. The court said that, concept of 'plea bargaining' is not recognised and is against public policy under our criminal justice system. Section 320 Cr. P.C. provides for compounding of certain offences with the permission of the Court and certain others even without permission of the Court. Except the above, the concept of negotiated settlement in criminal cases is not permissible. This method of short circuiting the hearing and deciding the criminal appeals or cases involving serious offences requires no encouragement. Neither the State nor the public prosecutor nor even the Judge can bargain that evidence would not be led or appreciated in consideration of getting flee bite sentence by pleading guilty.*<sup>2</sup>

The Court had also said that *'economic offenders resort to plea bargaining and the trial magistrate drowned by a docket burden nods assent to the sub-rosa ante-room settlement. The businessman culprit, confronted by a sure prospect of the agony and ignominy of tenancy of a prison cell, 'trades out' of the situation, the bargain being a plea of guilt, coupled with a promise of 'no jail'. These advance arrangements please everyone except the distant victim, the silent society. The prosecutor is relieved of the long process of proof, legal technicalities and long arguments, punctuated by revisional excursions to higher courts, the court sighs relief that its ordeal, surrounded by a crowd of papers and persons, is avoided by one case less and the accused is happy that even if legalistic battles might have held out some astrological hope of abstract acquittal in the expensive hierarchy of the justice-system he is free early in the day to pursue his old profession. It is idle to speculate on the virtue of negotiated settlements of criminal cases, as obtains in the United States but in our jurisdiction, especially in the area of dangerous economic crimes and food adulteration offences, this practice intrudes on society's interest by opposing society's decision expressed through predetermined legislative fixation of minimum sentences and by subtly subverting the mandate of the law. The jurists across the Atlantic partly condemn the bad odour of purchased pleas of guilt and partly justify it philosophically as a sentence concession to a defendant who has by his plea aided in ensuring the prompt and certain application of correctional measures to him'.*

The Apex Court in this earlier case had also held that *the practice of plea bargaining was unconstitutional, illegal and would tend to encourage corruption, collusion and pollute the pure fount of justice.*<sup>3</sup> In the same case, the Court had also said that *'It must always be remembered by every judicial officer that administration of justice is a sacred task and according to our hoary Indian tradition, it*

<sup>2</sup> State of Uttar Pradesh V. Chandrika 2000 Cr.L.J. 384(386)

<sup>3</sup> Kachhia Patel Shantilal Koderlal vs. State of Gujarat, AIR 1980 SC 854

*partakes of the divine function and it is with the greatest sense of responsibility and anxiety that the judicial officer must discharge his judicial function, particularly when it concerns the liberty of a person. The course followed by the learned Magistrate in the present case clearly showed that there was no application of mind by him to the case laid on behalf of the prosecution and he was a consenting party to the appellant being persuaded to enter the plea of guilty and, acting mechanically on the plea of guilty as extracted from the appellant, he appeased his insensitive conscience by recording a finding conviction against the appellant and let him off with a mere sentence of imprisonment till the rising of the Court and a nominal fine.'*

However, the judicial mind seems to have got modified since 2005 and one finds since then several examples of jurists and judges of the Supreme Court having championed the concept of plea bargaining (however, one can also observe the ardour cooling off in recent times). While commenting on this aspect, the division bench of the Gujarat High Court observed that, "*the very object of law is to provide easy, cheap and expeditious justice by resolution of disputes, including the trial of criminal cases and considering the present realistic profile of the pendency and delay in disposal in the administration of law and justice, fundamental reforms are inevitable. There should not be anything static. It can thus be said that it is really a measure of redressal and it shall add a new dimension in the realm of judicial reforms.*"<sup>4</sup>

## The Reality

One can envisage the various components of the criminal justice system as compartments of a canal system through which water is flowing continuously. If the flow rate gets clogged at any point, it will build up the level of water. If official, rational and legal 'gates' are not designed to control and harmonize this flow at every stage, the stakeholders at every stage will create unofficial, irrational and illegal 'gates' to avoid submergence. In criminal jurisprudence, this flow of cases begins with the police. Because the criminal law can be (and should be) set in motion at no cost to the complainant, there is a need to create such official 'gates' to rationalize the workload of the investigating agencies. Because we have failed to do this, the stakeholders 'manage' this by burking the registration of crime and despite the best intentions of police and judicial leadership, the problem of burking doesn't get resolved. This article will not examine the issue of police burking but would like to focus on how this 'gate' of plea bargaining that evolved in jurisdictions where the conviction percentage exceeds 90% and criminal trials usually don't last several years, will not serve any purpose in India today, as it is presently designed, and will therefore remain a dead letter for all practical purposes.

## Why would it be irrational for the guilty to opt for plea bargaining?

While it is a futile exercise to imagine the criminal mind to be a completely rational mind, in the sense that microeconomists define rationality, there is no gainsaying the fact that a large proportion of criminals would at least exhibit some kind of bounded rationality. Hence, the quantum of punishment, the certainty of punishment and the immediacy with the punishment is awarded: all will have a certain impact on the occurrence of crime. It is also accepted, by and large, that the certainty of punishment is much more of a deterrent than the quantum of punishment and so is its immediacy.

To understand why a 'rational' guilty party would not easily opt for a plea bargain, it would be instructive to take up an example of a type of offence that is amenable to plea bargaining under the

<sup>4</sup> State of Gujarat V. Natwar Harchanji Thakor (2005) Cr. L.J. 2957

Cr.P.C. Let us take the offences of 'cheating' and 'criminal breach of trust'. As per NCRB's 'Crime in India-2015' data, in 2015, in 71.5% of all cognizable IPC crime investigation was completed. However, this figure was only 49.6% for offences of cheating & criminal breach of trust. Thus, the clearing rate for cheating/criminal breach of trust was significantly lower than other crime. While the conviction percentage for all IPC crime was 46.9%, it was only 24.4% for cheating and criminal breach of trust. While the courts disposed off 14.8% of the pendency of all IPC cases, this disposal rate was only 8.5% for cheating & criminal breach of trust. Thus, cheating & criminal breach of trust are not only, comparatively speaking, investigated by police more tardily, they are disposed off more tardily in courts and the conviction rate is also much lower than other type of cases.

The proportion of the guilty who are convicted of their crime can be described as a product of the following four factors: proportion of offences reported to the police, proportion of reported cases registered by the police, proportion of registered cases finalized and charge-sheeted by the police and the proportion of charged cases ending in conviction. Let us explore each of these factors one by one.

Proportion of cases reported to the police: In the absence of authoritative crime victimization surveys, it is difficult to put a number to this figure. However, the General Economic Crime Survey 2016 done by PwC (Pricewaterhouse Cooper) in India<sup>5</sup> found as high as 31% of the respondents as having been victims of economic crime (as per NCRB, the two offences of cheating & criminal breach of trust constitute 91% of all economic crime). A CHRI (Commonwealth Human Rights Initiative) crime victimization survey done in 2015 found that only about half of the offences were actually reported to the police<sup>6</sup>. Considering these factors, taking a figure of 50% for this proportion appears to be reasonable.

Proportion of cases registered by the police: As already stated, this article is not an examination of the problem of 'burking', but it needs to be accepted that the Indian police under reports crime. The same CHRI survey had found that about half of all the reported cases were not registered by police. Even accounting for the fact that it is easier to burk white collar crime than bodily offences, taking a figure of 50% for this proportion also appears to be reasonable.

Proportion of cases charged: *Crime in India-2015* gives the charge-sheeting rate for these two offences as 70%.

Proportion of cases convicted: *Crime in India-2015* gives the conviction rate for these two offences as 24.4%.

Therefore it can be surmised that the approximate proportion of those guilty of cheating/criminal breach of trust getting convicted is a product of  $0.5 \times 0.5 \times 0.7 \times 0.24 = 0.042$  or 4.2%! Essentially, about 1 in 25 guilty stand to be convicted after trial (without accounting for appeals and revisions!). Having established that the punishment is not certain, we have to ask whether it is it swift enough.

*Crime in India-2015* reveals that for these two heads of crime the police disposed off 1,22,099 out of 2,49,350 under investigation cases. Similarly, the courts disposed off 30,298 out of 4,31,159 pending trial cases. Therefore it can be shown that the average time taken by the police and the courts to dispose off a case under these two heads of crime at the present rate of disposal is  $249350/122099$  plus  $431159/30298$  years, i.e. 16.2 years. Thus, on an average, about 1 in 25 guilty of cheating/criminal breach of trust stand to get convicted about 16 years after having committed the crime! Is it then rational for such an accused to accept a quick plea bargain and get convicted?

<sup>5</sup> <https://www.pwc.in/assets/pdfs/publications/2016/pwc-global-economic-crime-survey-2016-india-edition>

<sup>6</sup> [http://www.humanrightsinitiative.org/download/1461662128Crime%20Victimisation\\_Soft%20File\\_distribution](http://www.humanrightsinitiative.org/download/1461662128Crime%20Victimisation_Soft%20File_distribution)

NCRB data (*Crime in India 2015*) reveals that in 2015, out of 10502256 IPC cases for trial, a mere 0.03% i.e. 3428 cases were disposed off by plea bargaining. For cases under special and local laws (SLL), this proportion was a miniscule 1/20th of even this small number, with a mere 158 cases out of 10074819 cases. It is not accidental that the average conviction percentage for IPC cases was a mere 46.9% as compared to 92.4% of SLL cases. For 2056716 IPC cases sent for trial, 1325989 trials were completed: at 64%. For 4252670 SLL cases sent for trial, 3555630 trials were completed: at 83.6%.

Therefore, it is obvious that, though miniscule, twenty times more IPC cases were settled through plea bargaining than SLL cases because not only the likelihood of conviction in SLL cases is much more, there is also a likelihood of the disposal happening sooner and the punishment arriving earlier! An accused in this country is much more likely to take his chances with the regular trial than plea bargaining!

### **'Compounding' and 'Plea Bargaining'**

There is also often a lament that the process of 'compounding' offences is being conflated with the process of 'plea bargaining' in India. In my opinion, the Indian judiciary has been able to use the 'gate' of compounding offences much more effectively than plea bargaining. For instance, while 4216 cases of cheating/criminal breach of trust were compounded in 2015, only 102 cases were plea-bargained! In 2015 as per NCRB, 7.9% of the 2056716 IPC cases for trial, i.e. 162284 IPC cases, were disposed off by compounding u/s 320 Cr.P.C. and not by trial. This proportion was much smaller for SLL cases at 0.47%. However, this is not the complete picture.

As per NCRB data itself, more than half of IPC crime is compoundable u/s 320 Cr.P.C. with theft, rash driving, marital cruelty, trespass/burglary, cheating, grievous hurt and criminal breach of trust amounting to 46.7% of overall IPC crime (without counting 'other IPC' cases that contribute to 35.5% of overall IPC crime, and would contribute further to the proportion of compoundable crime). As compounding leads to the status of acquittal and plea bargaining leads to the status of conviction and as a convict is ineligible for a number of entitlements and eligibilities under the government as well under the election process, it is a great disincentive for plea bargaining and tilts further the balance of convenience in favour of seeking compounding rather than entering into plea bargaining.

Even the case eligible for compounding are much more than the cases eligible for plea bargaining. *Crime in India- 2015* reveals that for cognizable IPC crime about 46.7% were compoundable, i.e. about 13.7 lakh cases. On the other hand, a mere 2.08 lakh cases (IPC) were plea-bargainable.

It is also common knowledge that trial courts keep compoundable cases pending for disposal in *Lok Adalats*. Legal Services Authorities at district, state and national levels keep organizing *lok-adalats* to dispose off cases by this method. That the NCRB data is grossly underreported can be seen from the NALSA (National Legal Services Authority) website that reports taking up of as many as 897462 compoundable criminal cases on a single day on 12.9.2015 and disposing off 571741! This brings the ratio of cases disposed off by compounding to a more realistic 27.8%, that too in a single day!

However, the possibility of statistical boosting of such disposals also exists. No less than the Apex Court has mentioned on 10.9.2014 in *MPSLSA vs. Prateek Jain*, Civil Appeal No. 8614 of 2014, that '*... of late, there is some criticism as well which, inter alia, relates to the manner in which cases are posted before the Lok Adalats. We have to devise the methods to ensure that faith in the system is maintained as in the holistic terms access to justice is achieved through this system. We, therefore, deprecate this*

*tendency of referring even those matters to the Lok Adalat which have already been settled. This tendency of sending settled matters to the Lok Adalats just to inflate the figures of decision/settlement therein for statistical purposes is not a healthy practice. We are also not oblivious of the criticism from the lawyers, intelligentsia and general public in adopting this kind of methodology for window dressing and showing lucrative outcome of particular Lok Adalats.'*

## Escaping the punishment

While the penal effect of compounding is that of an acquittal, with no sentencing, that should not be the case with plea bargaining, theoretically speaking. However, in practice, this is how the trial courts are using plea bargaining with fines or flee bite sentences like sentencing till the rising of the court! As good data on this subject is not available in Telangana State Crime Records Bureau, I personally collected data from the judicial side for the city of Hyderabad. A register of the cases referred to plea bargaining is maintained in the court of Chief Metropolitan Magistrate, Hyderabad, for the year 2012 to 2015. During the year 2012, 47 cases were referred to Plea Bargaining Courts and out of them 14 cases were settled and 23 cases were not settled. Information regarding the remaining 10 cases could not be collected as the records could not be traced. During the year 2013, 10 cases were referred to Plea Bargaining Courts and out of them 9 cases were settled through plea bargaining process and the record of 01 case could not be traced. During the year 2014 two cases were referred to the Plea Bargaining Courts and one case was settled through the plea bargaining process. However on verification of records, the case which was disposed of was found to be not an account of plea bargaining but a conviction on admission of guilt. The second case is still pending. During 2015 only one case was referred to Plea Bargaining Court and it is not settled and is still pending, as in February 2017. In all these cases that were settled also, disposal was by award of fines or sentence of 1 day! The maximum sentence awarded was for 4 days! Despite the flea-bite sentencing in plea bargaining, it remains unattractive to the guilty due to the reasons explained above.

## Probation

Probation is another route by which the guilty can escape jail-time. In India, probation is governed by sections 359, 360 of Cr.P.C., the Probation of Offenders Act 1958 and the Juvenile Justice (Care and Protection) Act 2015 (for juveniles). Probation in India is mostly dependent on the policies of the State rather than a uniform Central Policy. For example, in Karnataka a State level Probation Advisory Committee has been constituted with High Court Judge as Chairman with official and non-officials as members. A District level Probation Advisory Committee has been constituted in each district consisting of the District and Sessions Judge as Chairman with official and non-officials as members. The After Care program in Kerala is intended to rehabilitate released prisoners and probationers coming under the supervision of District Probation Officers. The Department of Juvenile Welfare and Correctional Services was set up in Andhra Pradesh in 1990. There is also very little authoritative data available on the number of cases in which probation was awarded in India.

The Probation of Offenders Act lays down that report of the probation officer is considered before awarding probation. But, the Courts generally have shown scant regard for the pre-sentence report of the probation officer because of lack of faith in integrity and trustworthiness of the Probation Officers. In their view calling for the pre-sentence report would mean unnecessary delay, wastage of time, undue

exploitation of the accused by the probation officer and likelihood of biased report being submitted by him. The lower judiciary in India has not taken probation as a viable tool in sentencing. In a number of cases the accused have had to move the High Court and even the Supreme Court to get the relief of probation. If an accused gets relief of probation only in the High Court or the Supreme Court after passing through the turmoil of a long and cumbersome judicial process, the very purpose of lightening the judicial load gets defeated, leave alone worrying about the criminological implications of awarding or not awarding probation.

### **The ownership of 'plea bargaining'**

The 'gate' of plea bargaining was designed to be 'gate' for the prosecution to manage the flow of cases it sends up for trial. It was never designed to be managed by the judiciary. It is for the State, represented by the prosecutor, to determine which cases they would like to prosecute and which cases they would like to dispose off by offering a deal to the defence. Unfortunately, in India the prosecutors are answerable neither to the public nor to the state administration, leave alone the police leadership. Proformas are prescribed for senior APPs/APPs to give monthly reports on number of cases pending, disposed off, convicted, acquitted etc but no data is compiled by the DoP (Director of Prosecutions), who is an authority independent of the DGP, to regularly review and assess the work of the prosecutors. There is also no coordination between the SCRBs (State Crime Record Bureaus) and the DoPs and the statistics between these two agencies bear no correlation with each other.

Hence, it is the police that determine which case will be charged and which will not be. Because there is no system to evaluate the evidence, trial-worthiness of the case and feasibility of prosecution, it is expected as a matter of routine that every true case investigated successfully should be taken to trial. Hence, in practice, regardless of the quality of investigation, all such cases get charged. The ruling paradigm in police is 'to leave it to court'! Even case and counter case, where the police know one side to be false, are charged, leaving the court to decide the matter.

Because the prosecutors are incompetent and because the police are trusted neither by the judicial system nor by themselves, it is not surprising that a function that should have been discharged before going to court has metamorphed into the courts taking up this burden. In the original design, the court comes into the picture only after a mutually satisfactory disposition has been arrived at between the prosecution and defence, and not before! Ideally speaking, a trial must be conducted with the full judicial mind bearing down on it, without worry about the time being taken to dispose it. A judicial mind worried more about the pendency of cases before it is bound to be impatient and cases not having glamour, public attention or media scrutiny attached to them are bound to get the short shrift in the court. If every case is taken to trial, judicial scrutiny is bound to get diluted and yet the pendency will keep increasing.

Therefore, transplanting the concept of plea bargaining into India without having a prosecution answerable to the public and a police enjoying credibility and legitimacy in the polity as well as law, has created a mere chimera. It is no wonder that while seminars are conducted and pious declarations are made that plea bargaining can help in reducing trial load, in practice, nothing has changed on ground and court pendency continues to grow. Therefore, if the legal system is not able to shed its inbuilt trust of the investigating agencies and transfer the ownership of the 'gate' of plea bargaining to the police with proper safeguards, plea bargaining is not likely to make any dent in pendency of court cases.

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# Role of Police in Disaster Management : An Overview



Parvez Hayat

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## Abstract

The United Nations defines a disaster as a serious disruption of the functioning of a community or a society. Disasters involve widespread human, material, economic historical and cultural loss that may be irreparable and very likely to affect tourism economy or environmental impacts, which exceed the ability of the affected community or society to cope using its own resources.

The Red Cross and Red Crescent societies define disaster management as the organisation and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular preparedness, response and recovery in order to lessen the impact of disasters. Disasters hit the poorest the hardest. They often live in areas that are prone to recurring hazards, tsunami, gale, floods or droughts etc . They are also the ones who are bound to lose their homes, jobs and farmland when fleeing from scene of disasters often losing life, property and home and at times become subject of second victimization by criminals who even rob, snatch valuables, money from dead, burgle the affected houses, theft in Relief, looting relief materials there only during disasters and afterwards Role of Police becomes very crucial in protecting affected people from second victimization.

## Key words

Disaster Management, Police Response, Second Victimisation, typologies.

## World's Ten Deadliest disaster(Table 1.1)

Sl. No.	Name of Event	Year	Country and Region	Fatalities
1	Earthquake	1556	China, Shaanxi	830000
2	Earthquake	1731	China	100,000
3	Cyclone	1737	Calcutta, India	300000
4	Yellow River flood	1887	China	900,000–2,000,000
5	Messina Earthquake	1908	Italy	123000
6	Earthquake	1920	China, Gansu	235000
7	Great Kanto Earthquake	1923	Japan	142,000



8	Great Chinese Famine	1958-1961	China	15,000,000–43,000,000
9	Bhola Cyclone	1970	West Bengal, India & East Pakistan (now Bangladesh)	500,000
10	Tangshan Earthquake	1976	China	242,419

**Table 1.2****Major disaster in the Last Century**

Sl. No.	Name of Event	Year	Country and Region	Fatalities
1	China Floods	1931	China	1,000,000–2,500,000
2	Floods	1954	China	40,000
3	Cyclone	1970	Bangladesh, Chittagong Khulna	300,000
4	Bangladesh Cyclone	1991	Bangladesh	139,000
5	Earthquake	1999	Turkey	17,000
6	Tsunami	2004	Indonesia, Sri Lanka, India, Malaysia, Somalia, Bangladesh, Thailand	230,210
7	Hurricane Katrina	2005	United States of America	1,836
8	Sichuan Earthquake	2008	China	87476 deaths including missing
9	Cyclone Nargis	2008	Myanmar	More than 138,000 deaths
10	Haiti Earthquake	2010	Haiti	316,000

(Source Disaster Management in India, MHA-Gol, 2011)

During any emergency and aftermath of occurrence of disaster different Emergency Support Functionaries (ESFs) work in coordination with each other to minimize the impact of disaster on life and livelihood of the people. Police department also play very important role not only during disaster but on any accident happening in its area of jurisdiction. They work closely with local and central government organizations, emergency services, welfare and health agencies, utility companies and the many other organizations that can be involved in responding to an emergency. However, it is urging need to enhance the capacities of police personal in view of management of disaster for achieving larger community resilience.

## Introduction

Traditional police responsibilities have expanded tremendously since Disaster in Hurricane Katrina touched down in New Orleans in USA on August 29, 2005. Katrina and 9/11 in 2001, in world trade Centre in USA, not only highlighted the need for officials all over world to enhance preparedness and coordination efforts, but also emphasized the need for local police to broaden their roles during a crisis.

Typical police training focuses on keeping communities safe through prevention and detection of crime, traffic stops, investigative techniques, and arrests. Self-defense tactics and firearms training are also required for officers to meet government regulations and maintain minimum safety standards. However, after Katrina and similar natural disasters, police executives have been forced to incorporate additional training designed specifically for responding to catastrophic disasters.”

The principal roles of the police in an emergency are maintaining law and order, protecting life and property, public safety, assisting the movement of rescue, medical, fire and other essential services, assisting the coroner, coordinating movement control over land and conducting inland search and rescue. The aftermath of any disaster often goes on for months, even sometimes years. Police continue supporting agencies throughout the recovery, starting from just onset of disasters.

Police being one of First Responders and important part of Emergency Management Team, during any Man-made and Natural Disasters work as the core member for safety of community and recovery of the affected community from the disastrous situation. However, it has been noticed that the conceptual role of police in both pre-disaster planning, during the disaster and post-disaster responses has been largely ignored in the literature and academic discourse. Role of police has not been statutorily recognized rather mired by its failure or criticism by public even in certain Judgments of Hon'ble Supreme Court and High Court in handling serious disasters.

The professionalization of policing seemed to be largely achieved and the notion that the “crime problem” is something that could be addressed with deliberative public policy strategies was accepted in many corners. Likely for the first time in history, many in both the practitioner and academic communities began to believe that the police really could reduce crime through the adoption of research-based strategies. The manifestation and institutionalization of this belief are evidenced by the adoption of phrases like “evidence-based policing” that have begun to dominate the policing landscape.

## State of Art

The conceptual role of police in both pre-disaster planning and post-disaster responses has been largely ignored in the literature. The policing literature has given very little attention to the role of police in disaster events. Many leading college-level policing textbooks (e.g., Gaines & Kappeler, 2010), for example, discuss the issue in only very general terms and often only in the context of examples of police failures. While there is a growing body of research in recent years addressing the role of police in large-scale planned events such as major sporting events like the Olympics (Decker et al., 2005; Decker, Varano & Greene, 2007), and national political conventions (Scott, 2005), relatively little attention has been given to the role of police to natural or man-made disasters. They are given the difficult task of “creating calm out of chaos” (Punch & Markham, 2000)

In 2005, Hurricane Katrina made obvious the negative consequences associated with a police department and city government ill prepared for the unlikely but predictable “100 year storm” and the accompanying massive regional devastation. After decades of being largely ignored (Punch & Markham, 2000), the importance of the role of police in disasters is beginning to emerge as a substantive area of inquiry in the policing literature as public policy planners attempt to develop more robust disaster and terrorism plans (see Bonkiewicz & Ruback, 2012; Deflem & Sutphin, 2009; Punch & Markham, 2000; Smith & Rojek, 2007; Varano, Schafer, Cancino, Decker, & Greene, 2010).

In more recent years, particularly in the aftermath of the September 11th attacks and Hurricanes Katrina and Rita, there is a small but growing body of research that is taking a more conceptual approach

to the role of police in disaster events (Decker et al., 2005; Decker et al., 2007; Deflem&Sutphin, 2009; Harrald, 2006; Smith & Rojek, 2007; Varano et al., 2010). The capacity of public safety agencies to even communicate and share information is shaped not merely by technical issues but also by cultural factors that create the willingness to do so. In their analysis of the complex public safety infrastructure at the 2002 Salt Lake City Winter Games, Decker et al. (2005, p. 68) argue that a narrow focus on the “technical” ignores other salient factors such as “formal and informal occupational cultures within the [public safety] community that speak different languages.” With this in mind, any serious inquiry into the complex intersection of police and disasters must expand to give serious attention to police culture.

### **Analysing the role of Police in broader aspect**

After some recent large scale natural disasters like Bhuj Disaster in Gujarat 2001, Great Tsunami 1999 lashing out Chennai, other coastal areas in India, Sri Lanka, Maldives, Somalia, Indonesia, and Thailand etc in 2004, Super Cyclone in Orissa, in 1999, Hurricane Katrina touched down in New Orleans in USA on August 29, 2005. Katrina and 9/11 in 2001, in world trade Centre in USA, There is tremendous expansion in traditional role of police not only highlighted the need for officials all over world and nationwide in India to enhance preparedness and coordination efforts, but also emphasized the need for local police to broaden their roles during a crisis. Keeping communities safe through prevention and detection of crime, traffic management, investigative techniques and arrests are typical content of training of Police.

After 1999-2001 over a decade years of substantial attention to problems associated with responses to natural and man-made disasters, significant barriers remain in the level of communication and coordination among first responders includes police. These barriers are best understood as physical barriers of coordination amongst multi core agencies more importantly police, fire and other civic agencies, tasked with public safety and not technical in nature. Bhuj, Great Tsunami, Super cyclone in Orissa, Hurricanes Katrina and Rita further emphasized that the “lessons learned” in the aftermath of the 9/11 attacks as well as the infusion of federal and state resources to help address the systemic problems identified after 9/11 were largely ineffectual. Communication infrastructure was so devastated during Hurricane Katrina, for example, that many first responders had to rely on paper communications and face-to-face contacts. After nearly four years of “lessons learned” discussions, few could have imagined a more disastrous response to events that were predicted with several days advanced notice

### **Challenges Faced By Police**

#### **Lack of facilities and training**

Experience, however, demonstrates that police are ill prepared for the challenges associated with large-scale disasters such as major hurricanes and major terrorist attacks. The September 11th terrorist attacks, for example, shed light on a reality that was long known within the larger emergency planning arena, police and other segments of the first-responding community lack sufficient training, experience, and technological infrastructure to effectively respond to disasters when they occur. The lack of preparation is so fundamental in many ways that even in the most local (as opposed to state-wide or regional) first responder communities lack the capacity for the most basic forms of communication. At the time of the September 11th attacks, communication problems were well known throughout the emergency planning community. Similar but smaller scale problems were well documented during the 1993 World Trade Centre bombing, the 1995 Oklahoma City bombing, and the 1999 Columbine High School shooting (Brito, 2007). There seems to be a tendency, however, for the problem of interoperability and other problems with disaster planning to be “rediscovered” in the aftermath of the next major disaster. Real

questions remain about what must be done to ensure that police and other first responders can be better prepared to collectively respond to disasters when they occur.

## **TYPOLOGIES OF DISASTERS**

When considering police responses to disasters, it is first important to develop typologies of events to which police and other public and private entities may be required to respond. This conceptual approach is important because different types of disasters not only present various practical and political challenges but they constrain the capacity of communities to respond and shape the public's reactions.

At the conceptual level, Quarantelli (1988, 1993) distinguishes between non-community crises, consensus—type community crises, and conflict—type community crises. Non-community crises are those that generally affect a relatively isolated physical location and generally include examples such as transportation accidents, railways accidents, aviation accidents where there will be no role of community as first responders as there may not be communities living near by, no hospital, no communication and police shall be only first responders in Golden Hours and first line of defence till specialist Forces like NDRF, Army can be requisitioned and deployed for disaster mitigation,.

Community v-type crises are those that cause large-scale community-wide destruction and generally require a large scale mobilization of people and resources to address damage by shifting affected people to safer places. From this conceptual standpoint, the magnitude of the physical damage as well as the scope of the physical damage are important dimensions of the distinction between local crises and disasters. Based on this framework, consensus type are events caused by “natural or technological agents” that reflect traditional notions of “disasters.” Consensus events generally occur suddenly creating “widespread public consensus and a focus on terminating the crisis as soon as possible and re-establishing public order and peace. These forms of crises result in a consensus-building approach that results in a shared resolve to collectively “fix” the problem. In contrast, conflict-type crises are those resulting from “wars, civil disturbances, riots, or terrorist activities, communal disturbances, 26/11 attacks in Mumbai, extremists attacks in attacks in naxal infested areas (Quarantelli, 1988, p. 373).

## **Steps for mainstreaming role of police in Disaster Management**

Consideration of police responses to disaster events can be organized around three main issues as follow:

- a. Law enforcement agencies are presumably part of a broader discussion regarding how government, social service agencies, and other entities will plan, train, equip, and prepare for various natural and man-made disasters. This might involve a variety of meetings, training sessions, policy formulation, and the creation of mutual aid agreements, memoranda of understanding, and similar articulations.
- b. Police play an important role in working with other emergency service providers to deal with the immediate response to save lives and when possible, preserve property. Police personnel assist with myriad activities of relevance to the disaster event at hand, such as rescue efforts, rendering medical care, controlling and directing traffic, and communicating information.
- c. Agencies are central aspects of disaster recovery when a critical event has a more entrenched impact. As communities deal with the physical, economic, and social effects of disaster, law enforcement plays a key role addressing ongoing safety and crime concerns in affected areas.

## Involvement of Police during various phases of disasters

No community in a city can be certain that it will not be the scene of the next disaster. The unexpected aspect of a disaster is a fact of life. Role of police will vary in different disaster situations. The nature of law and order is the basic function of the police still mentally, physically and psychologically the police are more prepared and equipped to deal with abnormal and unexpected situations. Over a period of time based on tackling various disasters, situations lead to enhancement of their skill and experience to deal with disasters situations. The police have to share many other responsibilities which are actually the job of other agencies. Over the period, the police have become a formal and disciplined Govt. agency regarded by the people as one of the most effective managers. The role of police can be divided into two parts based on disaster situations- primary and secondary.

### Pre-disaster Role

Superintendent of Police of a district is ex-officio member of District Disaster Management Authority (DDMA) and in this capacity he could play important role in prevention and preparedness phase.

**Emergency Traffic Plan:-** Being familiar with the local terrain, Police should prepare emergency traffic plan including detail mapping with focus on strategic points, which may be used at the time of evacuation

**Detail communication plan** Police has a robust and effective communication system that is also for non police functions. It can also be used to propagate information and warning of threatening disaster. Thus, police can develop communication protocol for responding during disasters e.g. designate separate channel for rescue, relief.

**Resource Mapping:-** It is very important to locate essential resources at very beginning of search and rescue works. It has been experienced during the Kosi flood 2008 that in rescue and relief works even small and tiny elements become very important. So local police could identify, locate and document general essential elements useful for different kind of disasters.

**Training:-** Men in uniform (Police) are most visible and reliable government agency.

**Primary Role:** The primary role is evident during management of actual disaster situations which includes the following:

1. **Search-** Look for victims of disaster at the site.
2. **Rescue-** Once the victim is located after the search, next step is rescue them to safer places for further evacuation.
3. **Evacuation-** Victim evacuated to a safer place close to the site of disaster.
4. **Provision of life support system-** Facilities for quick evacuation and provision for quick medical aid, water, identification of dead are the important life support systems. Police in Disaster role are required to keep equipment, sprays, to stop blood first aid kits etc.
5. **Mobilization and deployment of resources.** -Effectiveness of any agency depends as to how quickly the resources are mobilized and deployed at the disaster site, the exact nature of deployment will vary from disaster to disaster. Most important resource mobilization is to make available adequate infrastructure for disaster managers and the affected civilians who are in distress.
6. **Communication system.** Ensuring effective communication network system is a key to any successful operation in a disaster. The basic objective is restoration of normalcy as quickly as possible. Overall security of area, maintaining public order and public safety emerges in modern literature and academic discourse as most important role of police.

7. **Restoration of communication system/ liasoning with rescue teams:** Telephonic communication breaks down since the telephone towers/offices get destroyed with the result that landline and mobile phones stop working. Wireless communication might be the only means left. During floods or any other disaster most of the rescue teams operate in unknown territories under adverse conditions where landmarks are either washed away or destroyed. During Kosi disaster 2008, Army & NDRF boats got lost and they had to spend nights outside the camps. Quite a few boats were snatched away by criminals, finally police recovered and given to civil administration, each boat deployed in rescue and relief work had one policeman for security purposes. Kosi had another unusual experience few NDRF and Army boats did have a police as guide lost track because frequency of their wireless sets were not synchronised with that of Distt. Police sets with the results local police sent teams in boats to locate them so police role as coordinator and support to outside agencies become significant.
8. **Prevention of commission of cognizable offences including all offences against property, human body and public tranquillity:-** During disaster situation people abandon their houses with or without belongings. The safety and security of such houses and belonging is at risk. During such time people are without jobs hence incidence of crime generally increases. Police can provide safety to such persons by active patrolling during disasters and by arresting the suspects beforehand.
9. **Coordination with various agencies:** During disaster various agencies are like NDRF, CRPF, BSF, these external agencies are not informed about physical terrain, route chart etc. Police can function as a link and support with external agencies. The coordination between police and other agencies needs to be standardized.
10. **Maintaining law and order, public safety and security aspects**

**Cordoning of the affected area-**Disaster site, technically speaking, is a scene of crime too, cordoning is essential to keep the spectators away from the victims, Katrina, Bhuj in Gujarat, Kosi floods, Bihar, were example of secondary victimisation. **The flow of traffic** to and fro at disaster site has to be regulated which is ensured by local police by proper diversions at strategic pre identified places.

**Cleaning the area** at disaster sites like train accidents, presence of police to regulate milling emotionally charged passengers, a gathering of crowd is detrimental to life and property of victims. It is achieved by local police only.

**Management of VIP security** as every disaster site is visited by VVIPs and VIPs. Providing adequate security cover and clear passage for the movement of important persons visiting the disaster site is a very important.

**Media management** and their proper channelization at the disaster site again assumes importance and adds to the role of the local police on the site. Effective coordination can support police to achieve success in any disaster operation only by creating understanding with various other agencies and NGOs involved in the management of a disaster situation. **Legal formalities** is one of the most important functions of the police is to deal with the damage to life and property at the disaster site as per the established law in this regard.

## Post-disaster role

After every disaster, certain compensation and payments are announced by various governmental agencies and NGOs. The police have a very important role to play in curbing fraudulent claims from

being cleared. Other than this, the police have to investigate further damages and losses. They also play an active role in rehabilitation exercises and programmes.

## Secondary Role

Secondary role of police mainly capture the pre disaster scenario. It is here that a gap exists in theoretical formulation of disaster management and practical implementation on the ground. In any disaster management plan there is a need to incorporate the role of Police. This role eventually refers to the preparatory stage of disaster management exercise. Any planning for disaster management with prior signals must take stock of police resources and the role they can play in contingency planning.

A law enforcement role may quickly evolve into a search and rescue role as the immediate or surrounding location of a disaster is largely secured. In the immediate aftermath of a disaster, the police will likely to be focused on preservation of life and to a lesser extent, preservation of property and evidence. Officers would be expected to assist with evacuating citizens from affected areas, providing information to the public, rendering medical care, and assisting with search and rescue efforts. This may involve following established plans, procedures, and agreements, or it may involve officers innovating their efforts in response to situations of unanticipated nature or magnitude. When disasters are man-made, law enforcement personnel will be expected to prioritize ensuring harm has been mitigated. This can create challenges for personnel. For example, in responding to active shooter situations officers seek to evacuate citizens from danger ensure that attackers not escape, information from witnesses, and forensic evidence.

**Camp management:** Security of camp inmates, officials and volunteers engaged in running of camps including health workers is core function. During Kosi disaster over 400 relief camps had people from many villages with different religious, political and caste backgrounds and thus had potential for friction. This requires deployment for law & order maintenance.

**Security during Relief Distribution/ Relief Management:** Security of relief distribution centre in term of cash and kind requires special attention, like wise security of grains, local bank branches.

**Causality information and disposal of dead:** The identification of people involved in accidents / emergencies is police responsibility. All enquiries could be handled by police station staffs. Disposal of dead bodies and documentation of dead and the missing for the benefit of next of kin to claim the compensation and ex-gratia.

**Restoration of Critical infrastructure:** disaster usually affect infrastructure such as road, telecommunication, health centres, school, electricity supply. Police can provide protection to the agencies who are involved in the restoration of such infrastructure.

**Feedback/assessment:** Since the police is the key factor in managing the disaster, their feedback assessment is very important in updating the plan for the future. and also in developing contingency plan.

**Deployment of policeman** on the boat playing in floods helps prevent over crowding of boat and prevent capsizing. Such boats are provided with hand held wireless sets to keep tracking its movement and providing help in disasters and to provide security to resources from unscrupulous elements e.g. during Kosi flood 2008 boats were captured by local goons.

## Role of police in long term recovery phase

Some disaster events are of a brief nature and have a confined physical and geographical impact. Other

incidents will result in widespread damage and destruction to residences, critical infrastructure, and other aspects of communities. These situations can create appreciable challenges for law enforcement. For example, in the aftermath of Hurricane Katrina law enforcement personnel throughout the affected area had to work very long hours for days on end providing security and control, assisting search, rescue, and recovery efforts, preventing looting and other criminal acts, and ensuring public safety. The officers working to secure the areas affected by Hurricane Katrina had to juggle very long work hours with their need as individuals to tend to their own families and deal with damage to their own property, all the while dealing with the grief, stress, and other emotions. Agencies can also find themselves affected by large-scale events. Vehicles and facilities can be damaged, communication and utility infrastructures can be lost, and unforeseen challenges can arise. All of this had to be done under extreme conditions, with disrupted communication and infrastructure. Moreover, their role was constantly shifting from public safety and security, to search and rescue, and back to security as the apparent threat landscape changed (Dellem & Sutphin, 2009; Smith & Rojek, 2007; U.S. Senate, 2006). This all occurred within the broader context of need and uncertainty for many first responders themselves. During Orissa super cyclone of 1999 the collector's office at Cuttack was flooded by mud. Men of the police force rescued the collector on their shoulders.

## CONCLUSION

Police since long has been dealing with disasters, unexpected calamity as they are the ones who are trained, remain in uniform as semblance of discipline and state manifest physical authority which command respect and, public faith and legal authority of state. Their training leads to mental and physical and mental toughness and therefore they can deal with unexpected calamity includes man made and natural disasters. Besides they are the one organ of state who have domain knowledge of local area, know local people, reach first on incident site besides community and they have the responsibility of maintaining law and order, public safety and calming the chaos.

In fact, police as one of first EMS agencies need to move away from the traditional policing mentality of clearly defining detailed policies and procedures for each possible incident and event. The "all hazards" approach to incident planning, training, policy articulation, and preparation is likely the most feasible approach to be adopted for agencies. Police need a clear operational framework, at the same time, need reasonable discretion and flexibility to execute plans and methodology based on the situational exigencies that they face in a given set of circumstances. Even within a given incident category, there are elements that vary in such a way that two similar hazards such as chemical incidents might require very different public safety responses in order to protect life and property.

Related to this is the need for police to pursue integrated response strategies through partnership with other emergency responders and also those who might play a role in incident recovery.

Local volunteers and community level action is important depending on the situation and typology of disaster so as to effectively deal with all kinds of disasters preparation and response. Though citizens are in most of disasters are first responders, police form a first line of defence and they have greater chance of saving life in Golden Hours certainly police along with community can serve to diminish some of suffering and losses that occurs during and after disasters and protect victims from second victimisation. They have to ensure that local voices are heard, local language recognized and response and a, recovery and rebuilding process belong to the front line of disaster responders' community and local police and SDRF created under NDMA Act 2005, so far 18 states have created SDRF mostly out of local police only with special training from NDRF and other training institutes located in country.



Odisha has created ODRF largely out of local police force itself, Volunteers who will reinvest in their communities. Similarly, Civil defence personnel, Red Cross officials, available members of civil society groups, and spirited public individuals, all play a significant role as 'first responders' till arrival of specialized agencies. They have to continue to supplement the efforts and activities of later. Factually major disaster situations bring in armed forces in the aid of civil authority army and Air Force have played a stellar role but local police have to come on front to co ordinate assist the Armed forces even in reaching relief at right places. Police personnel deployed for such relief operations could prevent commission of cognizable offences. There are disasters where assistance of specialize forces may not be required.

MFR (Medical First Response Training) for Police Personnel includes CPR (Cardiopulmonary Resuscitation) as well as coordination for providing smooth work includes Local Police, NDRF, Civil Defence, other stake holders. State Disasters Response Courses which has been battalions in 12 states which are trained in CBRN (Comical Biological Radiological & Nuclear Disasters).

Since law & order becomes a major problem after disasters, local police should be trained to learn ways and methods to lessen the law & order related problems in the pre, during and after disaster scenario in the vulnerable community. Looting, Violence particularly gender based violence, Human trafficking even snatching valuables from dead, all are related to second victimization are common problems that rear their head after a disaster strikes. The community and police can think of new ways to join hands together before a disaster for dealing with such issues in case of a disaster.

Police stations located in disaster areas should have a stronger multi level network includes HF, VHF, Tetra, Satellite phones, wireless set, land line network. Police officers & SHOs and other supervisory officers CUG plans (Close User Group) mobile phones besides their land line and other such important phones should be published in media for information for general public. The police also have basic equipments based on disaster specific locations like sniffer dogs, gas cutter, tree cutters, anti sabotage teams, search lights, life saving jackets, first aid boxes, boots, portable generators, reflector batons & jackets, boomer lights etc. Besides police man in each police station should be provided with the basic training in paramedics so that in event of disasters, victims may be provided with life saving medicines, basic first aids & treatment in the Golden Hours before transporting and referring victims to nearby hospital it will definitely minimize the lose of life after any disaster events.

The Master Trainers of NDRF who regularly receive specialised training by specialists from Switzerland, may conduct periodical training for ToT of local police as well statewide, on rotation basis so that a fixed % of policemen receive basic training.

Besides, like in Orissa ODRF, local police need to receive similar training from 'Sea Explorer' Institute' from Kolkata in Relief, Rescue, Under Water Diving, NISSA, Hyderabad, NCDC Nagpur.

The police multilevel communication system is made available for transmission and receipt of messages in connection with disasters.

The police invariably get involved in Search, Rescue operations, regulate transportation of victims, and relief work, medical assistance, assistance in distribution of supplies of foods and providing security at affected places to protect them from second victimization. Local police so trained and deployed in disaster prone areas can in turn train local community in preventive measures in event of disasters particularly in natural disasters.

Their training needs to be upgraded disaster specific in view of local hazards of area of deployment. All the police stations are required to be strengthened with trained personal in view of basic first aid and necessary equipment support.

Surprisingly World Conference on Disaster Risk Reduction on 18-22 Jan 2005 at Hyogo, Japan which adopted Hyogo framework 2005-15 and Sendai framework 2015-30 too did not mention police as first responder agency besides NDMA Act 2005 which specify role the of Army and NDRF in disasters but not giving specific role to Police as first responder. It requires amendment in the said NDMA Act 2005 and similarly state police disaster manual as recommended in proposed Model Police Act 2015 by BPR&D submitted to MHA for approval, should also be made mandatory to provide statutory role to local police in State Disaster Manual.

It, is, therefore, recommended that certain amendments are to be made in the NDMA Act - 2005 & States Disaster Manual so as to redefine the role of police in disasters risk deduction and management as their statutory duties besides their others responsibilities as proposed in Model Police Act - 2015 submitted by BPR&D to Ministry of Home Affairs.

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# Interrogation/ Police Interview: Myth, Realities and Challenges.

KV Thomas



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## Abstract

The police interview or interrogation, one of the major tools of criminal investigation is no longer confined to pre-trial investigations, but transcends to forensic labs and the Court rooms of learned Judges. The investigators, forensic experts and prosecutors should act in cooperation with each other to improve the performance of the Criminal justice system. In this backdrop, the article examines the subject of interrogation on a broad canvass of constitutional and legal parameters, police professionalism and evidentiary value and human- civil rights issues. It underlines the need of the lead actors of the criminal justice system properly understanding certain myths and challenges connected with interrogation so that they can better appreciate the evidence or inputs generated through interrogation, at professional plane. It also discusses as how the science and technology have become a major aid in overcoming many bottlenecks in the traditional methods of interrogation or police interview.

## Key words

Interrogation, Criminal Justice Reforms, High Value Detainee Interrogation Group (HIG), Reid and Kinesics models, Michael Crowe case, scientific tools to interrogation.

## Introduction

**T**he edifice of criminal justice system in any country rests on three main pillars namely investigation agencies which conduct pre-trial investigation of offences, prosecution and defense lawyers who assist the court to determine the truth at trial stage and the presiding officer or Judge who gives the verdict declaring the accused either guilty or innocent. The better synergy among these three vital entities is crucial for the smooth and effective functioning of the criminal justice system.

In this regard, certain pertinent questions come to our mind. Whether the personnel of these three crucial organs of the criminal justice system are equipped with adequate skills, knowledge, professionalism or expertise to effectively perform their chartered duties or tasks? Whether the existing mechanisms or pre-entry training schemes are adequate to equip them with the required skills to meet the new challenges and complexities in the criminal justice system? If not, what structural or organizational changes or innovative mechanisms should be initiated to overcome the bottlenecks in our criminal justice system?

Such issues have naturally attracted the attention of those at the helm of affairs of these institutions or policy-makers, from time to time. For example, Justice VS Malimath Committee on 2003 has made exhaustive study on these aspects and made a number of recommendations to revamp the criminal Justice system in India. The Committee highlighted that the investigators, forensic experts and prosecutors should act in cooperation with each other to improve the performance of the Criminal justice system. It also identified the need of various structural and organizational mechanisms to improve the professional skills and expertise of the personnel to cope with the new challenges.

Basically, the proper understanding of the modern science of criminology in all its bearings is a must for the above three categories of personnel. While it is necessary to know the bio-psycho-social theories regarding the causes of criminal behavior, it is of greater importance to master the advancements in the field of Forensic Science or Scientific criminology which go a long way to bring offenders to justice.

The spectacular advancements in the field of cybernetics and cyber-forensics have virtually revolutionized the criminal investigations. The police interview or interrogation has now become a major component of investigation. Interrogation no longer is confined to pre-trial investigations but transcends to forensic labs and the Court rooms of learned Judges. No doubt, police investigator, lawyer community and judicial officers etc need to improve and update their knowledge on this topic to do full justice to their profession. There is flood gate of literature on the subject. But, our endeavor is to examine the subject of interrogation on a broad canvass of constitutional and legal parameters, police professionalism and evidentiary value and human- civil rights issues.

The interrogation is the act of systematic questioning of an accused or suspect to elicit true statement. The British criminologists described interrogation as an art or science of making suspects speak truthfully. However, there are different perceptions on the question of designating interrogation as a science. One argument is that interrogation unlike other areas of science has not been developed on the basis of any proven hypothesis arrived through tests or experiments. On the other hand, these techniques have been evolved on the basis of the experiences and observations of their practitioners without any scientific basis.

The aim of interrogation or police interview is to get the most useful information about a crime or offender or an organization from a detainee in a humane and lawful manner with sufficient oversight by trained investigators or interrogators. This covers a wide spectrum of evidence or data such as the actual occurrence of event, facts and circumstances, persons involved, their antecedents, links with other crimes or criminals, future plans, recovery/discovery of items, evidence for prosecution and confession.

A properly planned and executed interrogation by professionally competent interrogators can unearth a goldmine of useful information on organized crimes, Counter-intelligence, economic offences and of course, traditional crimes or offenses like murder, rape, theft etc. Perhaps, the best example in the recent past was the High Value Detainee Interrogation Group (HIG) constituted by US president in June 2009 after 9/11 terror attack in the US in 2001. The main task of this body comprising personnel of Central Intelligence Agency (CIA), Federal Bureau of Investigation (FBI), the US Department of Defense and other Specialist groups was to generate actionable intelligence on any imminent terror strike or plots, through the systematic interrogation of detained terror suspects. In fact, US take much credit for the non-occurrence of post 9/11 terror strikes in their country for such drastic measures adopted by the Homeland Security and their intelligence establishments.

In fact, such measures or interrogation techniques by the US or other countries in the name of fighting global terrorism very often negate constitutional and legal parameters as well as international

conventions in respect of interrogation and connected mechanisms. The International Covenant for Civil and Political Rights (1966), Geneva Conventions -III&IV and Additional Protocol-I have specific provisions against torture, cruelty or inhuman/degrading treatment of prisoners of war, civilians or unlawful combatants subjected to detention and interrogation. The International humanitarian law, International Human Rights law and the domestic laws of many countries have similar protective clauses to safeguard the rights and privileges of persons in custody or detention. For example, the Miranda clause requirement set by the US Supreme Court in *Miranda vs. Arizona* in 1966 ensured special safeguards to citizens being subjected to interrogation. The above clause stipulated that prior to the time of arrest or interrogation of a person suspected of crime, he or she has the right to remain silent; the right to legal counsel and the right to be told that anything he or she says will be used in court against him/her. In India, the Right to silence is a fundamental right guaranteed to the citizens under Article 20(3) of the Constitution which says that no person accused of any offence shall be compelled to be a witness against himself.

Ironically all these Covenants, Protocols, laws and regulations have been relegated to the background when overenthusiastic political regimes give a free hand to investigators and interrogators to deal with grave issues like terrorism. The best example is the Guantanamo Bay controversy where the terrorist suspects were subjected to inhuman torture and cruelty by US special Investigators/ interrogators. In the special interrogation techniques approved by US Defense secretary in April 2003 under the Special Training Program SERE (Survival, Evasion, Resistance and Escape) ten Interrogation techniques that apparently negate the fundamental element of lawful and humane approach in interrogation have been formally adopted. These techniques reminiscent of US soldiers' crude interrogation methods against Vietnamese soldiers/ prisoners included total isolation, sleep deprivation, sensory deprivation, Stress positions, sensory bombardment, Forced nudity, Sexual humiliation, cultural humiliation, Water-boarding, phobia-exploitation, exposure to extreme cold etc.

All the above techniques one way or other violate the UN conventions especially the Clauses of Geneva Convention to which USA is a signatory. In fact, after 9/11, the US had taken a stand that Geneva Convention Protocol or clauses need not be followed in letter and spirit in the case of terror suspects especially those belonging to Al Qaida and Taliban. Thus, apparently unlawful techniques of interrogation went unabated in Guantanamo bay of Cuba, Abu Gharab of Iraq, Bagaram of Afghanistan and the net work of CIA 'black sites' in different countries. The reality is that when US defiantly and boldly pursue such techniques of interrogation, many other countries clandestinely adopt such unlawful techniques in interrogations. This leads to steady increase of human rights violations in different countries, which have evoked wide spread reaction from the Amnesty International and other Human Rights NGOs, world over.

At the same time, every sovereign State is duty bound to protect the lives and properties of citizens for which crime control through lawful means is an essential aspect. Police is the most visible instrumentality of the State in crime control mechanisms. The Cr Pc empowers a police investigator to interrogate suspects involved in the commission of crime. But, all police personnel need not be successful interrogators. An ideal interrogator should have an impressive personality, blessed with a number of personal and professional traits such as patience, compassion, determination, confidence, alertness, good memory, gift of gab, sound knowledge of various subjects, decent mannerisms, kindness, frankness and sincerity and above all the ability to win over the respect of the interrogatee. Hans Gross had rightly summarized these qualities as; 'He who knows man; who is gifted with memory and presence of mind; who takes pleasure in his work and zealously abandon himself to it; who is always scrupulously bound by the rules laid down in law and who sees always in the accused a fallen brother or one who is wrongfully suspected, he will question well'

The successful interrogators develop many of those professional traits through their long experience in this field. Thus, professionally-conscious Police and Security organizations have formed separate cells or branches exclusively for interrogation tasks. Over the years, by interrogating a wide variety of suspects such as terrorists/extremists, espionage agents (external and internal), secessionists and insurgents, economic offenders, communalists and fundamentalists, hardened criminals and other offenders of serious crimes, the personnel of such branches develop necessary strategies, skills, sound knowledge and understanding on human psychology and weaknesses that make them the best professional interrogators. Justice VS Malimath Committee has rightly highlighted this aspect as; 'It can hardly be over emphasized that interview of witnesses and interrogation of suspects/accused should be done in a professional manner so as to elicit the truth. This is possible only when the Investigating Officer possesses professional competence, has adequate time at his disposal and the interview/interrogation is conducted in a proper ambience'.

Ironically, even such professionally competent experienced interrogators deviate from the basic principles of interrogation at the instance of the whims and fancies of the top brass or the agency which control the entire investigation or operation. Sometimes, the interrogators receive specific orders 'to break the suspect psychologically or to break him physically so as to get the findings established at any cost'. Majority of the interrogators conscious of their professional or career interests seldom resist such dictates! Influenced by such preconceived approach, interrogators adopt unlawful means including 'third degree methods' to extract false confession from the suspect virtually defeating the due process of law in the investigation process. Sometimes, religious, communal, political, ethnic or parochial sentiments influence the interrogators who through their biased mind try to corner the suspect in line with their prejudices.

The case of adhoc or the ready-made interrogation teams constituted to meet exigencies or to question an array of suspects is more awesome. Sometimes, public rhetoric or media-trial of sensational crimes or offenders forces the authorities to make such hotchpotch arrangements. From my practical experience, I can safely state that such exercises seldom serve any purpose to adduce evidence in the investigations or collect useful intelligence in sensitive operations. For example, in a crucial counter-insurgency operation in one of the North Eastern states during early 1990s, dozens of security/intelligence personnel who served in that state some decades ago were air-lifted from various destinations and assigned with the task of 'interrogating' the suspected ultras of a dreaded insurgent outfit in the state. Anyone can well imagine the actionable or useful intelligence or leads generated by these 'so called interrogators' who treated the entire exercise as a picnic to a trouble-prone state at the cost of national exchequer! Same was the case with 'interrogators' who were totally ignorant of space science or technology but entrusted with task of questioning internationally renowned space scientists implicated in an infamous espionage case!

No doubt, such human factors or errors cast shadow on the authenticity of inputs or evidence adduced by the investigators through interrogation. This, to a great extent, can be overcome through corrective mechanisms at organizational or personnel level. But, the more serious challenge is the built-in weakness in the traditional methods of interrogation holistically practiced by investigation agencies from time immemorial. In this connection, let us examine two universally accepted models of police interview or interrogation namely, Reid and Kinesics.

In the Reid technique, the emphasis is to extract confession or admission of guilt from a suspect through a series (nine) of steps. Those inter-alia include: direct confrontation urging the suspect to explain why the offense took place; shifting the blame away from the suspect to some other person or circumstance to build confidence on him to speak truth; discouraging the suspect from denying the guilt; trying to use suspect's explanation to move towards the confession; reinforcing sincerity to ensure

that suspect is receptive; posing alternative questions giving two choices- guilt or otherwise and finally leading to the suspect's confession or admission of guilt that is recorded for evidence. The Kinesic interviewing places more reliance on the subject's word choice and phrasing in respect of questions posed to him or her. This model had also formulated an elaborate deception detection technique based on body movement, Facial expressions, possible physical characteristics of Head, Eyes, Hands and legs, besides physiological symptoms and voice variation while a suspect is on interview process.

On a closer analysis, the above models of interrogations are based on the complex interrelations between human mind and body that are manifested through distinct physical and metabolic changes under special circumstances or situations. The underlying principle is that the suspect or the accused under stress or strain created through systematic questioning would exhibit distinct physical and mental/verbal behaviors, based on which the interrogators can arrive at conclusions on their involvement or otherwise in a specific crime or offence. In William Sargant's words; 'The stress that they (interrogators) put the subject under causes distinct and predictable physiological effects that result in the subject losing his/her previous sets of beliefs'. This change in belief ultimately leads to confession. Considering the complexities of the human mind as unraveled by psychologists and psycho-analysts like Sigmund Freud, Dr Alexis Carrel etc in the last century, one pertinent question is on the reliability or authenticity of such change of belief or the confessions by suspects under stress. How far such confessions can be taken for granted in the case of hardened criminals or highly indoctrinated terrorists of 'Fidayeens' (suicide squads) prepared to sacrifice their lives for the cause for which they fight?

In the backdrop of such questions, the Reid and Kinesic models of police interview/interrogation came under major criticism for their over-emphasis on the confession of suspects. The sensational murder case Stephanie Crowe of Escondido, California in 1998 and the proven false confession of two juveniles during interrogation evoked wide spread public debate and awareness on the problematic police interrogation techniques leading to false confession and miscarriage of justice. In the above case, 14 year old Michael Crowe, the brother of the victim who was initially suspected in the murder succumbed to the pressure and falsely confessed after nine hours of intense interrogation including the infallible Computer Voice Stress Analyzer test. Joshua Treadway, Michael's friend and suspected co-perpetrator in the crime was interrogated for about 22 hours. He too had confessed on the lines of Michael. Fortunately for Michael and Joshua, their innocence was established when Stephanie's blood was discovered on the sweatshirt of a homeless drifter, Richard Tuite, who was subsequently tried and convicted. The inadequacy of legal mechanisms to avert such tragedies also came under sharp criticism. These developments paved the way for extensive research on various interrogation techniques and causative factors for false confessions.

One of the main themes of these researches was the reliability of the detection of deception by suspects during police interviews. The researchers found that behavior or response styles of suspect during interview cannot be fully relied upon to identify the truth from the deception. The science has also not supported the notion that investigators are adept in detecting the deception during interviews. It was also established that interrogators who depend on non-verbal or linguistic clues as indicators are prone to error. Another factor for false confession was investigator's bias or tunnel vision. This is a common phenomenon in criminal justice system in which the lead actors such as investigators, prosecutors, judges and defense lawyers focus on a suspect; select and filter the evidence that will build a case for conviction, while ignoring or suppressing evidence that points away from the guilt. Thus, in many cases interrogators easily overlook or dismiss any statement or disclosure by the suspect that is inconsistent with the chosen theory, attributing them as irrelevant, unreliable or incredible.

Thus in order to minimize the miscarriage of justice, the future generation of police investigators, lawyers and judicial officers should be aware of certain known myth and misconceptions about police interrogation. The myth number one is the argument by section of police leaders that police interrogation is a science and hence the evidence so adduced through this process should be taken for granted by the Judiciary. Time and again, it is proved that various interrogation techniques are not based on any hypothesis or proven experiments as in the case of various branches of science. The second myth is that the false confessions are almost nil or extremely rare in police interview or interrogation. This is found to be factually incorrect as proved by a number of cases and studies. Perhaps, the best example is the Stephanie Crowe case. Another misconception is that vulnerable individuals are prone to false confession. Though there is general tendency of juveniles and youth easily yielding to false confessions, it is incorrect to make inferences that the vulnerable persons are easily prone to confessions. What matters more in the case of confession by suspects belonging to higher strata of the society are the nature of interrogation techniques, bias approach of interrogators and their eagerness to extract confession from the suspect at any cost? The third degree methods also play a crucial role in such confessions. There were many instances when senior scientists and bureaucrats, unable to withstand the humiliation and mental torture by the interrogators volunteered to make any sort of confession where as their drivers or servants stood to their ground for days without yielding to the interrogation techniques. Another myth projected by police leaders in particular is that the study of police interrogation or false confessions are in infant stage and as such no conclusive findings could be arrived at on such matters.

Another myth of considerable significance is that Juries do not want expert testimony. This is contrary to actual facts as Juries or Judges attach considerable significance to the proper appreciation and interpretation of scientific and Forensic evidence or data brought before them during the trial. Influenced by public uproar or media trial, some of them handle such evidence indifferently or callously leading to the gross miscarriage of justice with wider ramifications. For example, in an infamous espionage case involving senior space scientists, the decision of a High Court judge giving full legal sacrosanct to a controversial video-tape containing the confession of one of the suspects subsequently influenced the entire course of investigations. Had the presiding officer shown due diligence to properly appreciate the technical and circumstantial aspects of that piece of evidence with a professional mind, an entirely different story might have been unfolded in that case. Despite such aberrations, Indian judicial system has enough check and balances to avert the miscarriage of justice as such pieces of technical evidence are never taken as conclusive evidence, but only as corroborative evidence.

That doesn't mean that investigators or interrogators need not look for scientific tools or methods in criminal investigations. Essentially, they should. With the advancement of science and technology, such tools have become inevitable and crucial aids to any successful investigator. For example, in the field of interrogation, the Lie detector or the Polygraph test, the P300 or the Brain Mapping test and the Narco-analysis or the Truth Serum test have been widely used for extracting confessions or ascertaining truth. These psychoanalytical tests are also used to interpret the behaviour of criminals or suspects for corroborating the findings of investigators.

In fact, medical research and neurological studies paved the way for such innovations in the criminal investigation field. For example, the researches by Robert House, a Dallas Texas physician on the effect of scopolamine during child birth led to the genesis of Narco-analysis in this area. Scopolamine was known to produce sedation and drowsiness, confusion and disorientation, in-coordination and amnesia for events experienced during intoxication. Thus, he concluded that a patient under the influence of scopolamine temporarily loses the power to think or reason and thus cannot create a lie. The above test



was first introduced in 1936 to induce a suspect under the influence of the drug so that he talks freely without trying to manipulate his answers.

The Narco- test is now conducted by mixing 3 grams of Sodium Pentothal or Sodium Amytal dissolved in 3000 ml of distilled water. Depending on the person's sex, age, health and physical condition, this mixture is administered intravenously along with 10% of dextrose over a period of 3 hours with the help of an anaesthetist. The effect of the bio-molecules on the bio-activity of an individual is evident as the drug depresses the central nervous system; lowers blood pressure and slows the heart rate putting the subject into a hypnotic trance resulting in a lack of inhibition. The subject is then interrogated by the investigating agencies in the presence of the doctors. The revelations made during this stage are recorded both in video and audio cassettes. The report prepared by the experts is used in the process of collecting evidence. The consent of the person is required to conduct the test.

The Polygraph or Lie Detector Test is based on an assumption that there is an interaction between the mind and body. The signs or effects of this interaction are monitored by various components or the sensors of a polygraph machine attached to the body of the suspect subjected to interrogation. A clinical or criminal psychologist prepares a set of test questions depending upon the relevant information about the case provided by the investigating officer, such as the criminal charges against the suspect and statements made by him. He is questioned and the responses are measured. Lying by a suspect is accompanied by specific perceptible physiological and behavioural changes which are recorded by the sensors. The responses so recorded in the form a graph are analyzed by the experts/ investigators.

P300 or the Brain Mapping test is one of the latest tools used by interrogators. This test was developed and patented in 1995 by neurologist Dr. Lawrence A. Farwell, Director and Chief Scientist of 'Brain Wave Science'. In this method commonly known as 'Brain-wave finger printing' the accused or the suspect is first interviewed and interrogated to find out whether he is concealing any information. After attaching sensors to his head, he will be seated before a computer monitor. He is then shown certain images or made to hear certain sounds. The sensors monitor electrical activity in the brain and register P300 waves, which are generated only if the subject has connection with the stimulus i.e. picture or sound. Dr. Farwell has published that a MERMER (Memory and Encoding Related Multifaceted Electro Encephalographic Response) is initiated in the accused when his brain recognizes noteworthy information pertaining to the crime. These stimuli are called the 'target stimuli'.

Just like innovations in the field of scientific or forensic tools for interrogation, criminal investigation agencies world over are experimenting with new techniques of interrogation. The biggest challenge before the agencies is as how this tool can be effectively used to generate inputs that can avert terror strikes or other organized crimes, while upholding the due process of law. Another area of concern is the false confessions by the accused/suspects which lead to miscarriage of justice. Taking such factors into account, many countries/ agencies have formulated new interrogation standards which inter-alia include: minimizing the use of psychologically manipulative techniques; video-recording of custodial interrogations; better training for improving professionalism of interrogators and special precautionary measures in respect of the interrogation of vulnerable sections. Naturally, such measures will give more reliability to the evidence generated by investigators through interrogation.

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2. The High-Value Detainee Interrogation Group, or the HIG, is a cooperative effort between the FBI, the CIA, the Department of Defense, and other government agencies. Frazier Thompson, IV was the first Director
3. In *Miranda v. Arizona* (1966), the Supreme Court ruled that detained criminal suspects, prior to police questioning, must be informed of their constitutional right to an attorney and against self-incrimination.
4. Hans Gustav Adolf Gross was an Austrian criminal jurist and an examining magistrate. He is believed to be the creator of the field of criminalistics and is to this day seen as the father of Criminal investigations. ...
5. Ibid, sl No 1, above
6. William Walters Sargant was a British psychiatrist who is remembered for the evangelical zeal with which he promoted treatments such as psychosurgery, deep sleep treatment, electroconvulsive therapy and insulin shock therapy. His most popular work is ‘ Battle for the mind’
7. Sigmund Freud was an Austrian neurologist and the founder of psychoanalysis, a clinical method for treating psychopathology through dialogue between a patient and a psychoanalyst
8. Alexis Carrel was a French surgeon and biologist who was awarded the Nobel Prize in Physiology or Medicine in 1912 for pioneering vascular suturing technique. His most popular work is “Man-the Unknown’

# Effect of Mild and Hard Steel Core Bullets of 7.62X39mm Ammunition on Bullet Resistant Jackets: A Comparative Study



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Navdha Bhardwaj, B.P Singh,  
Dr. Manavpreet Kaur

## Abstract

The modern body armor is specifically designed to protect the wearer's vital organs from injury caused by firearm projectile. The body armors are made using bullet resistant (BR) material and need testing before their regular use. This testing is done under standard conditions following a standard protocol to ascertain the jacket will work as expected. The testing includes the firings on the BR materials with different firearms and ammunition. Due to variation in quantity and quality of propellant and characteristics of bullet, every bullet has an individualistic effect on the BR materials. The present study presents the comparative study of the effect of mild and hard steel core bullets of 7.62x39mm ammunition on BR jackets. The samples considered for this study were BR jackets received from various security and defense services. The samples were subjected to the test firings from a distance of 10 meters. The velocities of the bullets were measured using Ballistics Data Measurement System. The parameters considered for comparison include size and shape of the hole on BR jackets and depth of back face signatures to check penetration capability.

## Key words

bullet resistant material, propellant, 7.62x39mm ammunition, BR jackets, back face signature, kevlar

## 1. INTRODUCTION

**B**ullet-resistant (BR) materials are commonly used where the threat of attack by an armed criminal is high. It can both protect the individuals as well as discourage the plundering attempts in all types of criminal activities involving the use of a firearm. Nowadays, BR materials are also used at public facilities by the law enforcing delegacies such as police stations, jails and courthouses. Moreover, certain types of facilities that didn't previously use BR materials are now using them. For example, hospitals in sensitive areas now use bullet-resistant materials for extraneous protection of their Emergency Departments in order to provide security against gang-related drives by shooting [1]. The BR material can be categorized into several bullet-resistant

accessories like BR glasses, BR vests, BR helmets, BR patkas, BR jackets (BRJ). Testing should be done of bullet resistant materials before implying them for regular use. The testing of BR material should be done with different ammunitions. BRJ are commonly used by soldiers of paramilitary forces. It is specifically designed to protect the wearer's vital organs from injury caused by firearm projectiles.

1.1 Organization of a BR jacket :As the ultimate aim of using BR jacket is to provide protection to the wearer from the unforeseen firearm attacks the jackets are constituted in a manner to provide shelter from all types of firearm impact. Every BR jacket comprises of a soft armor panel and a hard armor panel. The soft armor panel is made of layers of woven fabrics or Kevlar which catches and withstand the bullet in the web of its very strong fibres belonging to a class of polymers which function like gauze, at a microscopic level. Each polymer chain is made of millions of units called 'monomers', linked to each other by chemical bonds. In Kevlar, the monomers are linked within their own chains, and are also cross-linked to monomers in other chains. More cross-linking strengthens the material making it harder to separate the linked chains which makes Kevlar five times stronger than steel. The fibres absorb and disperse the impact energy. To provide additional protection from high velocity rifle rounds like AK-47, SLR, INSAS, 12 BORE, a hard armor panel (HAP) is present along with the soft vest. High Performance Polyethylene (HPPE) i.e. hard fiber based laminates and ceramic plate based systems are broadly used in HAP. The jackets also have trauma packs on each side which help in reducing the impact on the wearer in case of a non-perforating shot. The Flexible additional armor panel generally envelops the complete torso whereas HAP inserts give protection only to the vital areas of the torso. Hard plate reinforced bullet proof jackets are mainly worn by combat soldiers, armed police forces, law enforcement agencies, hostage rescue teams etc [2]. Two kinds of jackets are being envisaged by the Indian Army. For a "low threat perception" mission, the jacket weighs less than 4 kilograms and have a trauma pad with a soft armor plate all around it: the other one is high threat mission jacket which weighs 10.5-11.5 kilograms with hard armor plates all around it. The latter provides protection against 7.62mm x 39mm mild steel core ammunition fired from an AK-47 from 10 meters [3]. The present study discusses the effect of mild and hard steel core bullets of 7.62x39mm ammunition on bullet resistant jackets.

## 2. METHODOLOGY

The body armors so analyzed are usually made using bullet resistant (BR) material and need testing before employing them for usage. This testing is done under standard conditions following a standard protocol to ascertain whether it will work as expected.

### 2.1 Sampling

BR jackets received from different companies and suppliers were used as test samples. The ammunition 7.62x39mm and the service rifles of the concerned police and army personnels were used for test firing.

### 2.2 Materials

Firearm used: AK -47, Ammunition used: Mild and hard steel core 7.62x39mm ammunition, Plasticine clay to check back face signature, Steel Sphere ball, Thermometer, Submersion tank, Test Barrel Fixtures, Velocity Measurement Equipment, Backing Material Fixture, Vernier caliper

### 2.3 Test condition

Ideal temperature and humidity condition should be maintained for standardized testing and calibration of jackets. For the present study the ideal condition reported in BPR&D and NIJ manuals [4,5] were followed where-

- Temperature:  $21^{\circ}\text{C} \pm 2.9^{\circ}\text{C}$  ( $70^{\circ}\text{F} \pm 5^{\circ}\text{F}$ ).
- The test relative humidity should be 80 %.
- The test temperature should be  $65^{\circ}\text{C}$  ( $149^{\circ}\text{F}$ ).
- Relative humidity:  $50\% \pm 20\%$

## 3. PROCEDURE

Physical examination of the samples is carried out by a group of officers nominated by the Director, CFSL, Chandigarh. One authorized representative of the firm is always present during the physical examination which would include analysis of the documents and physical parameters. The user should carry out the Human Fitness Trial and Functional operational trial of full BR jacket before ballistics trial evaluation. Based on the operational requirements, the user should assess the type of BR jackets (44mm BFS or 25mm BFS) required by them [4].

### 3.1 Weight of jacket

- Take out the jacket from the box.

Remove the HAP and SAP from the jacket and weighs the HAP. As per the guidelines of BPR&D and NIJ manuals [4,5] the total weight of BR Jacket including HAPs, SAPs, trauma pads and outer carrier should follow the below mentioned parameters:-

- (i) Standard size - 6.31 kg
- (ii) Large size - 6.62 kg
- (iii) Size of Hard Armor Panel-305mm X 254mm
- (iv) Weight of HAP should be approximately 1.8 kg as shown in figure 1.



**Figure-1:** Picture demonstrating the weight of HAP.

The BR jacket should consist of an outer carrier, removable Soft Armor Panels of aramid fibre and two High Performance Polyethylene Plates.

### 3.2 Shot Location Marking

- Clearly mark the shot locations on each sample. At least 6 shots are fired on every BR jacket to be tested. The shot locations are clearly marked directly on each sample according to the following criteria:

The first three shots should meet the shot-to-edge distance prerequisites and should not exceed the minimum shot-to-edge distance plus 19mm (0.75 inch) from the panel edge. The next three shots should meet the shot-to-shot distance requirements where they should be located within 100mm (3.94 inch) diameter. For panels in the sufficient area, the shots should be slightly dispersed. As the construction and material thickness vary across the panel of the armor, the locations of shots 4, 5 and 6 should be adjusted to exploit the weakest portion of the armor. For armors with folds or other discontinuities additional shots should be fired so that at least one shot impacts each fold, or discontinuity. If a single fold or discontinuity extends more than one half the width or height of the jacket, at least two shots should impact that discontinuity. For small armors with limited shot area, the locations of shot 4, 5 and 6 may be varied in a way that one of these shots impacts the discontinuity. All BR Jackets should be tested with six shots in the approximate pattern shown in Figure 2.

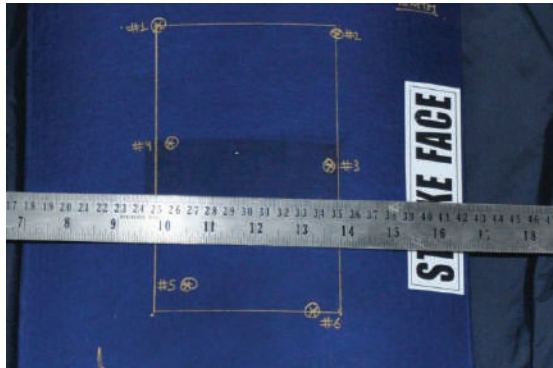


Figure-2: Showing marked shots location.

### 3.3 Wet Test

Testing was started with the wet followed by Dry armor sample. Take one part of each BR jacket from each type of firearm and submerge it in water tank for 30 minutes as shown in figure 3. Each panel of BR Jacket sample submersion equipment consist of a water tank of the size sufficient to allow at least one armor panel of the largest template size to hang vertically for 30 min (+5 min/-0 min), without any fold or bends, with the top edge of the armor at least 100mm  $\pm$  25mm (3.9in  $\pm$  1.0 in) completely immersed in water, and with at least 50mm (2.0 in) clearance around the panel. The water was replaced if visible impurities were seen in the water. The water temperature is set at 21°C+2.9°C/-5.8°C (70°F+5°C/-10°C). After removing the panel from the water, it is hanged vertically and allowed to dry for 10min (+ 5 min/-0 min) before mounting on the test fixture. The testing procedure of the panel should be completed within 40 min after removing it from the water. The total duration of the ballistic test on each armor panel should not be longer than 30 min, from the time of first shot to the last shot was fired [4].



Figure- 3: Showing BR Jacket sample submersion.

### 3.4 Preparation of Plasticine and drop test

- Meanwhile prepare the plasticine clay backing material for back face signature testing. The exposed surface of the calibrated backing material was placed in intimate contact with the back face of the armor panel under test and the movement of the panel was restricted from its original position by securing it with two vertical and three horizontal elastic straps, 51 mm wide with Velcro closures. Using a pencil or other appropriate tool, the outline of the sample was lightly traced onto the backing material to document the original position of the sample. The straps were positioned to restrict the movement of the panel from its original position, leaving the strike face impact area(s) exposed. The backing material fixture was positioned to assure proper impact placement and angle of incidence (0 degree) of the test round at location one.

Backing Material Calibration: Calibration of the Plasticine clay backing material was accomplished before and after each sequence of firing of six shot and before 12 shot test sequence. Calibration was accomplished using the equipment and techniques specified below:

Drop weight: Steel Sphere

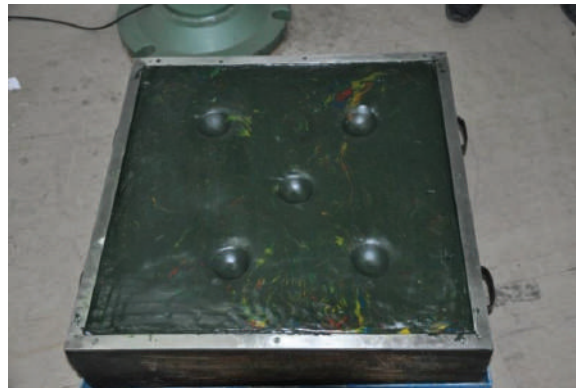
Drop weight size: 63.5mm  $\pm$ 0.05mm  
(2.5 in. in diameter $\pm$ 0.01lb)

Drop weight mass: 1043 g  $\pm$ 5 g (2.29 lb  
 $\pm$  0.01 lb)

Drop height: 2.0 meters (6.56 ft)

Drop spacing: Minimum of 76 mm (3.0 in) from fixture edge to indent edge and a minimum of 152 mm (6.0 in) between indent centres.

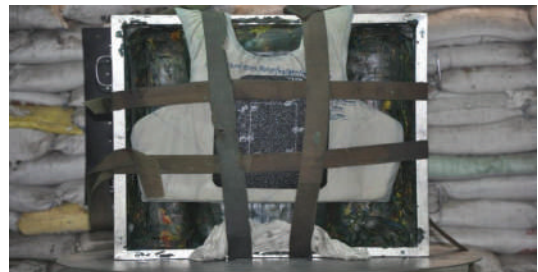
Each calibration drop consist of a free fall of the steel sphere onto the conditioned backing material as shown in Figure 4.



**Figure- 4:** Showing drop tests on Plasticine clay backing material.

A minimum of five drops are completed with the five drop arithmetic mean depth of depression to be  $19 \pm 2$ mm at  $30 \pm 2.9^\circ\text{C}$ . In addition, no indentation has to be greater than 22mm (0.866 in) or less than 16mm (0.630 in). Backing material temperatures are measured using a thermometer with a measurement accuracy of  $0.5^\circ\text{C}$  ( $0.9^\circ\text{F}$ ) or better. Temperature reading is taken prior to pre and post-test drop testing at a minimum of 254mm x 254mm (10.0in x10.0in) from any two fixture edge at a minimum depth of 25mm (1.0 in) and maximum depth of 51mm (2.0 in) from backing material surface [4].

Backing Material Fixture Positioning :The backing material fixture is positioned to ensure proper bullet impact placement and angle of incidence of the test round. For any shots requiring a nonzero angle of incidence, the backing material fixture should be positioned so that the bullet line of flight is directed toward the vertical centerline of the armor panel at the point of impact in our study. The inside dimensions of the backing material fixture were



**Figure- 5:** Showing Mounting of B.R jacket.

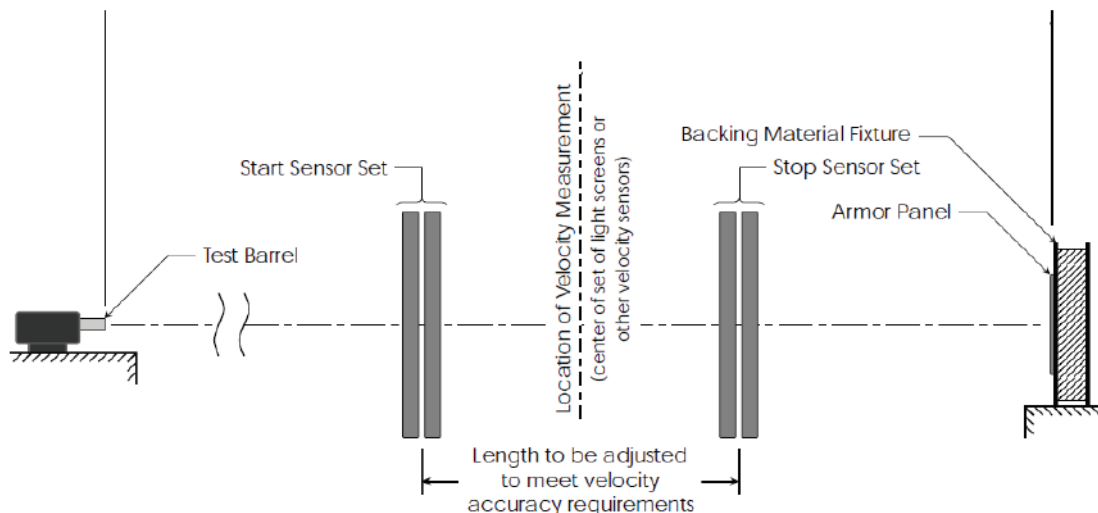
610mmx 610mm with a depth of 140mm (24.0inx24.0inx5.5in). The tolerance on all dimension is  $\pm 2\text{mm}$  ( $\pm 0.08\text{in}$ ). The back of the fixture was removable and was constructed of 19.1mm (0.75in) thick wood or plywood. The sides of the fixture were constructed of rigid wood or metal, preferably with a metal front edge to reliably guide the preparation of the flat front surface of the backing material as shown in figure 5.

### 3.5 Range Preparation

The test equipment arrangement as shown in Figure 6. For rifle rounds, BR Jackets panel should be mounted 10 meters  $\pm 1.0$  meters (49.2 ft  $\pm 3.28$  ft) from the muzzle of the test barrel or weapon. In order to check the possibility of excessive yaw at impact, or for other range configuration reasons, the distance may be adjusted for every individual threat, however, the distance shall not be less than 4 meters (13.1ft) for any round. The backing material fixture is rigidly held by a test stand, which permits the vertical and horizontal shifting of the entire BR Jacket sample and backing material which in turn facilitates targeting the entire backing material as shown in figure 6. In order to achieve stability, all electronic equipment are allowed to warm up for sufficient time before testing [5]. The range specifications according to the weapon so used as follows :

- $10 \pm 0.1\text{m}$  for high velocity threats/rifle rounds.  
 $\pm 0.1\text{m}$  for low velocity threats/handgun rounds.

Adjustable distance to meet velocity requirements

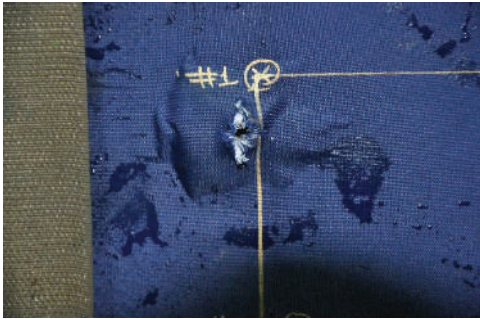


**Figure- 6:** Showing diagrammatic representation of firing range area.

- 3.6 Now, remove the panel from submersion tank, and hang it vertically and allow it to dry for 10 minutes before mounting it on the test fixture.
- 3.7 The bullet shots are then fired on the pre-marked sites.
- 3.8 The first test round was fired against the armour panel at location as shown in figure 7 (a). The



armour panel and the backing material were examined to determine whether the bullet made a fair hit or complete penetration occurred. If no complete penetration (CP) occurred and the bullet made a fair hit, the BFS depression was measured and recorded as shown in figure 7(b).



**Figure- 7:** Showing (a) shot-1

(b) Back Face Signature.

The armour panel is adjusted again to its original condition (i.e. smooth and set the ballistic material in order to return it to its original configuration) and is again placed on the backing material on the same position using the traced outline in the backing material as a guide [6].

#### 4. RESULTS AND DISCUSSION

Thirty jackets tested for the two ammunition type i.e. mild steel core and hard steel core, showed remarkable differences in dry as well wet test. The various parameters considered for the analysis included velocity with which the bullet strikes the jacket, back face signature of the jacket and shape of hole created by the bullet on the jacket. The velocity of the hard steel core bullet was observed to be in the range of  $635 \pm 15$  m/s with slight variation in few shots. While the velocity of the mild steel core bullet was found to be in the range of  $710 \pm 15$  m/s. This difference in the velocities can be attributed to the amount of propellant of bullet and the composition of the bullet core as well as jacket. The mild steel core ammunition contained higher amount of propellant as compared to that contained by the hard steel core ammunition. Greater the amount of propellant, greater is the volume of gases released and greater will be the velocity of the bullet. Also, hard steel core bullet has higher density as compared to mild steel core bullet which makes it to travel comparatively slower through the air. The variation in the velocity of the two bullet types is shown in the Table 1 and 2.

The second aspect considered i.e. the back face signature was found to be dependent on the velocity of the bullet. Though the other factors like density of clay, temperature, humidity, weight of the jacket also affected the back face signature experienced by the jacket, but these factors were kept constant in the present study so the sole factor affecting the back face signature was the velocity of the bullet. As BFS is directly proportional to the velocity with which the bullet strikes the jacket, higher the velocity of the bullet higher will be the BFS and the same was observed in the present study. The BFS of the hard steel core bullet had a maximum value of 7.51mm for dry test and 9.17mm for the wet test, while the BFS of the mild steel core had the maximum value of 18.58mm for dry test and 21.56mm for the wet test. This difference can be directly attributed to the differences in the velocities of the hard and mild steel core bullets. The difference between BFS values is summarized as in Table 1 and 2. BFS is measured only for the first three shots because the panel weakens with every shot.

**Table- 1:** Showing the variation in the velocity of bullet and in BFS of HSC in both wet and dry condition.

HARD STEEL CORE (Indian 7.62×39mm Ammunition)				
TYPE OF TEST				
	WET		DRY	
	VELOCITY OF BULLET (m/s)	BFS (mm)	VELOCITY OF BULLET (m/s)	BFS (mm)
JACKET-1	643.294	0.75	635.122	1.1
	643.252	0.57	638.162	1.93
	643.004	1.42	634.397	2.1
	636.456		643.376	
	636.051		643.832	
	636.132		651.423	
JACKET-2	656.944	2.13	661.419	1.69
	667.69	4.41	662.954	5.69
	661.463	5.74	651.593	2.01
	655.48		666.356	
	649.056		651.975	
	658.501		651.551	
JACKET-3	657.419	3.19	660.764	4.06
	659.326	5.25	651.763	14.17
	663.878	5.67	656.211	PERFORATED
	661.638			
	660.939			
	657.895			
JACKET-4	647.962	3.8	653.894	3.53
	647.417	4.44	660.895	5.02
	654.793	3.29	659.283	4.07
	662.383		647.836	
	653.808		644.039	
	655.222		659.979	
JACKET-5	615.233	4.67	618.051	2.33
	629.756	5.68	615.914	4.27
	605.4	6.08	602.737	4.83
	618.443		614.175	
	608.235		601.106	
	619.845		608.051	

JACKET-6	639.591	2.3	644.081	1.63
	657.765	2.38	663.837	3.72
	660.153	2.92	658.628	1.52
	658.494		661.288	
	640.587		66.628	
	653.467		650.999	
JACKET-7	628.2	1.91	627.628	2.84
	638.57	2.57	624.337	2.46
	633.352	3.11	632.031	2.29
	634.84		634.639	
	621.234		630.795	
	625.978		632.911	
JACKET-8	635.163	6.39	638.081	1.3
	637.186	0.81	641.19	2.83
	636.011	1.73	630.398	1.51
	638.162		624.532	
	634.437		630.318	
	628.694		623.908	
JACKET-9	631.393	6.97	635.364	3.73
	621.023	4.42	643.593	6.24
	644.371	2.61	643.791	3.94
	643.73		630.557	
	626.37		638.121	
	644.953		637.999	
JACKET-10	615.422	4.85	625.274	5.14
	611.322	7.62	619.924	9.17
	625.939	7.51	618.965	8.34
	611.845		627.353	
	628.615		615.915	
	603.865		624.298	
JACKET-11	612.783	5.59	615.991	5.95
	617.971	5.4	630.835	5.79
	614.439	4.61	612.7	5.55
	608.458		614.779	
	610.947		615.726	
	620.771		611.658	

JACKET-12	636.823	4	659.213	2.53
	628.776	3.02	656.16	0.75
	660.237	3.04	657.428	1.5
	658.957		673.001	
	672.947		653.553	
	653.009		670.083	
JACKET-13	601.405	4.43	602.122	4.06
	603.814	6.55	614.654	7.97
	609.609	4.44	605.117	5.81
	614.58		602.517	
	608.251		613.497	
	610.826		605.842	
JACKET-14	609.646	1.34	609.449	3.68
	599.193	3.55	614.131	4.34
	606.206	4.23	606.607	6.3
	610.826		610.862	
	617.624		607.336	
	612.084		600.297	

**Table- 2:** Showing the variation in the velocity of bullet and in BFS of MSC in both wet and dry condition.

MILD STEEL CORE (Foreign 7.62×39mm Ammunition)				
TYPE OF TEST				
	WET		DRY	
	VELOCITY OF BULLET (m/s)	BFS (mm)	VELOCITY OF BULLET (m/s)	BFS (mm)
JACKET-1	707.814	7.22	718.752	9.39
	716.127	5.41	713.827	8.53
	720.357	6.75	710.884	4.2
	707.714		704.92	
	707.164		716.23	
	708.617		717.309	
JACKET-2	714.847	12.48	716.92	3.34
	716.435	8.82	712.752	6.7
	708.918	6.9	709.827	5.65
	711.288		702.884	
	709.17		714.92	
	710.48		715.23	

JACKET-3	707.107	8.52	707.814	7.09
	709.322	9.36	706.065	6.75
	709.371	12.77	711.288	6.01
	707.419		706.864	
	709.17		712.2	
	705.418		707.364	
JACKET-4	700.722	7.02	709.17	6.27
	706.614	4.48	710.631	7.05
	713.572	1.34	707.447	1.25
	710.379		708.519	
	709.572		717.36	
	718.133		700.231	
JACKET-5	711.187	16.88	706.364	18.16
	705.169	18.58	707.814	19.64
	709.975	17.78	707.664	21.56
	700.084		712.962	
	701.545		707.156	
	711.238		700.077	
JACKET-6	700.652	1.41	701.399	1.23
	718.081	2.88	706.165	4.68
	701.115	5.59	711.845	4.63
	711.541		701.853	
	709.874		707.414	
	702.885		702.754	
JACKET-7	706.664	7.05	711.44	9.25
	704.686	9.98	701.557	9.79
	702.297	6.18	706.106	8.37
	700.777		706.414	
	700.771		708.466	
	702.8		707.664	
JACKET-8	711.31	10.02	706.864	8.09
	701.199	9.88	703.928	10.59
	705.507	8.69	706.215	6.34
	701.115		702.447	
	701.262		709.774	
	705.227		701.066	

JACKET-9	701.016	4.52	705.667	4.34
	709.594	4.1	707.496	5.08
	708.466	5.77	702.099	3.56
	706.427		709.723	
	701.164		703.529	
	701.557		705.986	
JACKET-10	702.569	18.13	709.741	15.18
	705.169	7.27	703.284	8.73
	706.265	8.26	702.937	7.83
	701.797		700.089	
	709.465		704.011	
	700.525		703.482	
JACKET-11	713.097	2.92	720.818	6.03
	701.756	3.66	718.637	5.91
	714.703	2.31	720.577	5.07
	707.914		700.722	
	719.136		721.507	
	701.754		702.642	
JACKET-12	707.564	6.34	700.869	8.17
	704.771	10	709.925	8.3
	705.219	6.24	715.717	7.8
	711.187		713.98	
	702.593		716.743	
	718.752		714.878	
JACKET-13	719.713	8.2	710.677	6.24
	723.288	10.28	713.579	7.69
	703.245	5.41	710.617	5.4
	714.639		716.566	
	712.422		710.817	
	713.983		721.686	
JACKET-14	717.89	6.06	713.837	5.08
	712.723	8.32	714.488	6.98
	715.399	5.43	717.482	4.59
	714.185		704.127	
	721.274		715.095	
	720.245		717.095	

JACKET-15	714.439	3.34	702.691	3.81
	716.538	5.22	721.033	4.02
	715.154	3.48	717.618	3.36
	714.337		725.058	
	704.523		717	
	715.717		717.154	

It was found that (Jacket 3) hard steel core bullet (HSC) of Indian 7.62×39mm ammunition have more penetrating power than that of Mild Steel Core (MSC) bullet of foreign ammunition though its velocity is almost 100m/s more than HSC ammunition . Hence, density of the core of projectile plays a vital role in penetration/perforation of BR material.

The shape of the hole made by bullet on the jackets was studied using ranges of velocity. The different shapes considered were round, oval, irregular and rectangular Figure- 4.1, 4.2, 4.3 and 4.4.



Figure- 4.1: Showing round hole.

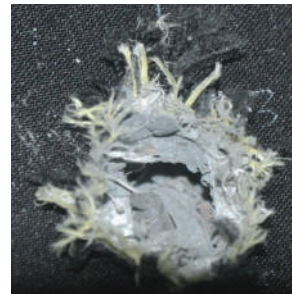


Figure- 4.2: Showing oval hole.

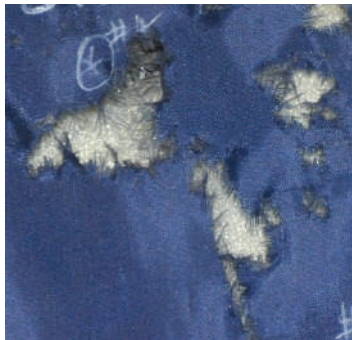


Figure- 4.3: Showing irregular hole.



Figure- 4.4: Showing rectangular hole.

Though differences were observed in the shapes of hole but the observations could not lead to form any opinion regarding the generalization of the shape of the hole with respect to velocity of the bullet or the composition of the bullet. Hence, a more rigorous and thorough study is required on this topic. The differences in the shape of the holes created by the mild and hard steel core bullets were observed on HAP which consists of boron carbide material. The HAP's of the jackets having polyethylene as BR material were found to have smaller and circular kind of hole for each firing are as shown in the Table 3 and 4.

**Table- 3:** Showing shape of hole created by MSC bullet at different range of velocity under dry and wet condition.

MILD STEEL CORE BULLET				
TYPE OF TEST				
	WET		DRY	
	VELOCITY(m/s)	SHAPE OF HOLE	VELOCITY (m/s)	SHAPE OF HOLE
JACKET-1	700-710	RECTANGULAR & OVAL	700-710	ROUND
	711-720	OVAL	711-720	ROUND
	721-730		721-730	
JACKET-2	700-710	OVAL	700-710	ROUND
	711-720	OVAL	711-720	ROUND
	721-730		721-730	
JACKET-3	700-710	RECTANGULAR & OVAL	700-710	ROUND
	711-720		711-720	ROUND
	721-730		721-730	
JACKET-4	700-710	RECTANGULAR	700-710	ROUND
	711-720	RECTANGULAR	711-720	ROUND
	721-730		721-730	
JACKET-5	700-710	OVAL	700-710	ROUND
	711-720	OVAL	711-720	ROUND
	721-730		721-730	
JACKET-6	700-710	OVAL	700-710	ROUND
	711-720	OVAL	711-720	ROUND
	721-730		721-730	
JACKET-7	700-710	RECTANGULAR & OVAL	700-710	ROUND
	711-720		711-720	ROUND
	721-730		721-730	
JACKET-8	700-710	OVAL	700-710	ROUND
	711-720	OVAL	711-720	ROUND
	721-730		721-730	
JACKET-9	700-710	RECTANGULAR & OVAL	700-710	ROUND
	711-720		711-720	
	721-730		721-730	



JACKET-10	700-710	RECTANGULAR	700-710	ROUND
	711-720		711-720	
	721-730		721-730	
JACKET-11	700-710	OVAL	700-710	ROUND
	711-720	OVAL	711-720	ROUND
	721-730		721-730	<b>IRREGULAR</b>
JACKET-12	700-710	RECTANGULAR & OVAL	700-710	ROUND
	711-720	OVAL	711-720	ROUND
	721-730		721-730	
JACKET-13	700-710	OVAL	700-710	ROUND
	711-720	OVAL	711-720	ROUND
	721-730	RECTANGULAR	721-730	ROUND
JACKET-14	700-710	RECTANGULAR	700-710	<b>ROUND &amp; OVAL</b>
	711-720	RECTANGULAR	711-720	ROUND
	721-730	RECTANGULAR	721-730	
JACKET-15	700-710	OVAL	700-710	ROUND
	711-720	RECTANGULAR	711-720	<b>IRREGULAR</b>
	721-730		721-730	

**Table- 4:** Showing shape of hole created by HSC bullet at different range of velocity under dry and wet condition.

HARD STEEL CORE						
TYPE OF TEST WET				TYPE OF TEST DRY		
	Type of Amm.	VELOCITY (m/s)	SHAPE OF HOLE	Type of Amm.	VELOCITY (m/s)	SHAPE OF HOLE
JACKET-1	O.F.V	620-640	ROUND & OVAL	O.F.V	620-640	ROUND
		641-650	ROUND		641-650	
		651-670			651-670	
JACKET-2		620-640			620-640	
		641-650	ROUND		641-650	
		651-670	ROUND & OVAL		651-670	<b>OVAL</b>
JACKET-3		620-640			620-640	
		641-650			641-650	
		651-670	ROUND & OVAL		651-670	ROUND

JACKET-4		620-640			620-640	
		641-650	ROUND		641-650	ROUND
		651-670	ROUND		651-670	ROUND
JACKET-5	<b>K.F</b>	595-605	ROUND	<b>K.F</b>	595-605	ROUND
		611-625	ROUND		611-625	ROUND
		626-635	ROUND		626-635	
JACKET-6		620-640	ROUND		620-640	
		641-650			641-650	<b>OVAL &amp; ROUND</b>
		651-670	ROUND		651-670	ROUND
JACKET-7		620-640	ROUND		620-640	<b>OVAL &amp; ROUND</b>
		641-650			641-650	
		651-670			651-670	
JACKET-8		620-640	OVAL		620-640	
		641-650	OVAL		641-650	
		651-670			651-670	
JACKET-9		620-640	ROUND		620-640	ROUND
		641-650	ROUND		641-650	ROUND
		651-670			651-670	
JACKET-10		620-640	ROUND		620-640	ROUND
		641-650			641-650	
		651-670			651-670	
JACKET-11		620-640	ROUND		620-640	ROUND
		641-650			641-650	
		651-670			651-670	
JACKET-12		620-640	ROUND		620-640	
		641-650			641-650	
		651-670	ROUND		651-670	ROUND
JACKET-13	<b>K.F</b>	595-605	ROUND	<b>K.F</b>	595-605	<b>ROUND &amp; OVAL</b>
		611-625	ROUND		611-625	ROUND
		626-635			626-635	
JACKET-14	<b>K.F</b>	595-605	ROUND	<b>K.F</b>	595-605	ROUND
		611-625	ROUND		611-625	ROUND
					626-635	

## 5. CONCLUSION

The present study shows that the hard steel core Indian ammunition of 7.62×39 mm caliber have more penetrating power than that of mild steel core Foreign ammunition of 7.62×39 mm caliber manufactured in various foreign countries such as Russia, Hungary, Bulgaria, China etc. In most of the terrorists, militant and naxalite activities 7.62×39 mm firearm and ammunition are used in India. Hence all the jackets and other BR material used by military and paramilitary forces, police and other security agencies must be ballistically evaluated with Indian 7.62×39 mm ammunition.

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# Operational Analysis of Robbery and Attempt to Murder Cases Using GIS: A Case Study of Nanded City



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BPRD Publication  
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Mr. Vijendra P. Kamble, Dr. Nilesh K. Deshmukh,  
Mr. Pritam Tamsekar, Mr. Govind Kulkarni

## Abstract

This paper compares the current status of science and practice concerning spatiotemporal (space-time) crime analysis within police department in the Nanded city and how hot spot detection methods can be extended to allow for sequential measurement. Major concerns are how sequential measurement is combined into the framework of point pattern analysis, while maintaining the capability of multi-scale analysis. Crime analysis and crime mapping, achieved by GIS, have a major role in reducing crime and improving the effective police activities. To solve these problems, the police personnel can use GIS for analysis and prevention of crime.

The crime analysis is the most important phase in this methodology because it is the primary phase. The crime analysis is done by the help of Arc-GIS and topographic image. For the purpose of crime analysis in the present paper there are five operations are performed i.e. Assigning latitude and longitude to every crime spot, Road extraction, extracting border of police station, creating database of FIR data, distribution of that data. Then it is transformed to layer.

In this paper authors have studied various observations mentioned by different researchers in field of GIS and also summarized, how findings of these researchers can help to improve and implement preventive measure suggested.

## Key words

GIS- Geographical information system,

## Introduction

Crime analysis describes the systematic collection, preparation, interpretation and dissemination of information about criminal activity to support the mission of law enforcement. The goal of crime analysis is the unlocking of valuable insights from the collected crime information in order to assist law enforcement with criminal apprehension and crime prevention. The traditional and earliest

system of intelligence and criminal record maintenance has failed to live up to the requirements of the existing crime situation. Manual methods neither provide accurate, reliable and complete data round the clock nor does it help in trend forecast. It also results in lower productivity and ineffective utilization of manpower. The solution to this ever-increasing problem lies in the effective use of Information Technology. [1] Problem exists with communication when new system is introduced. In this paper the author has introduced the concept of linking SSM (soft system methodology) and VSM (visible system model). As per the author experience applying an information system thinking approach has enhanced the provision of information.[2] Significance of using GIS and technique. It can effectively work as police analysis system can give instruction quickly to police when accident takes place. By the use of this technique police department can response much more quickly to deal with emergency. [3]

Any behaviour bringing this safety into danger may be called as murderous crime e.g. beating, make compulsory hunger, causing physical, damages, inducing to commit suicide, victimizing, attempting to murder. Killing somebody intentionally comes under the crime of murder. If the person committing the act knows that it so imminently dangerous that it must, in all probability cause death or such bodily injury as is likely to cause death, and commits such act without any excuse for incurring the risk of causing death or such injury as aforesaid.[4]

Crime analysis:

Crime Analysis is defined as a set of systematic, analytical processes directed at providing timely and pertinent information relative to crime patterns and trend correlations to assist the operational and administrative personnel in planning the deployment of resources for the prevention and suppression of criminal activities, aiding the investigative process, and increasing apprehensions and the clearance of cases. It supports a number of department functions including patrol deployment, special operations, and tactical units, investigations, planning and research, crime prevention, and administrative services. Crime analysis can be divided into three categories: 1) Tactical 2) Strategic 3) Administrative[5]

The novel uses the concept of boundaries or edges to analyze micro level deference in crime in various urban neighborhoods. It was suggested different way to support the crime pattern theory. 1) Crime events are complex as these relates to urban dynamics. 2) Crime events explore here are not uniformly distributed in the edges. Some edges have significantly higher level of crime. 3) The variation in crime distribution may be attributed to the movement patterns within these edges. [6]

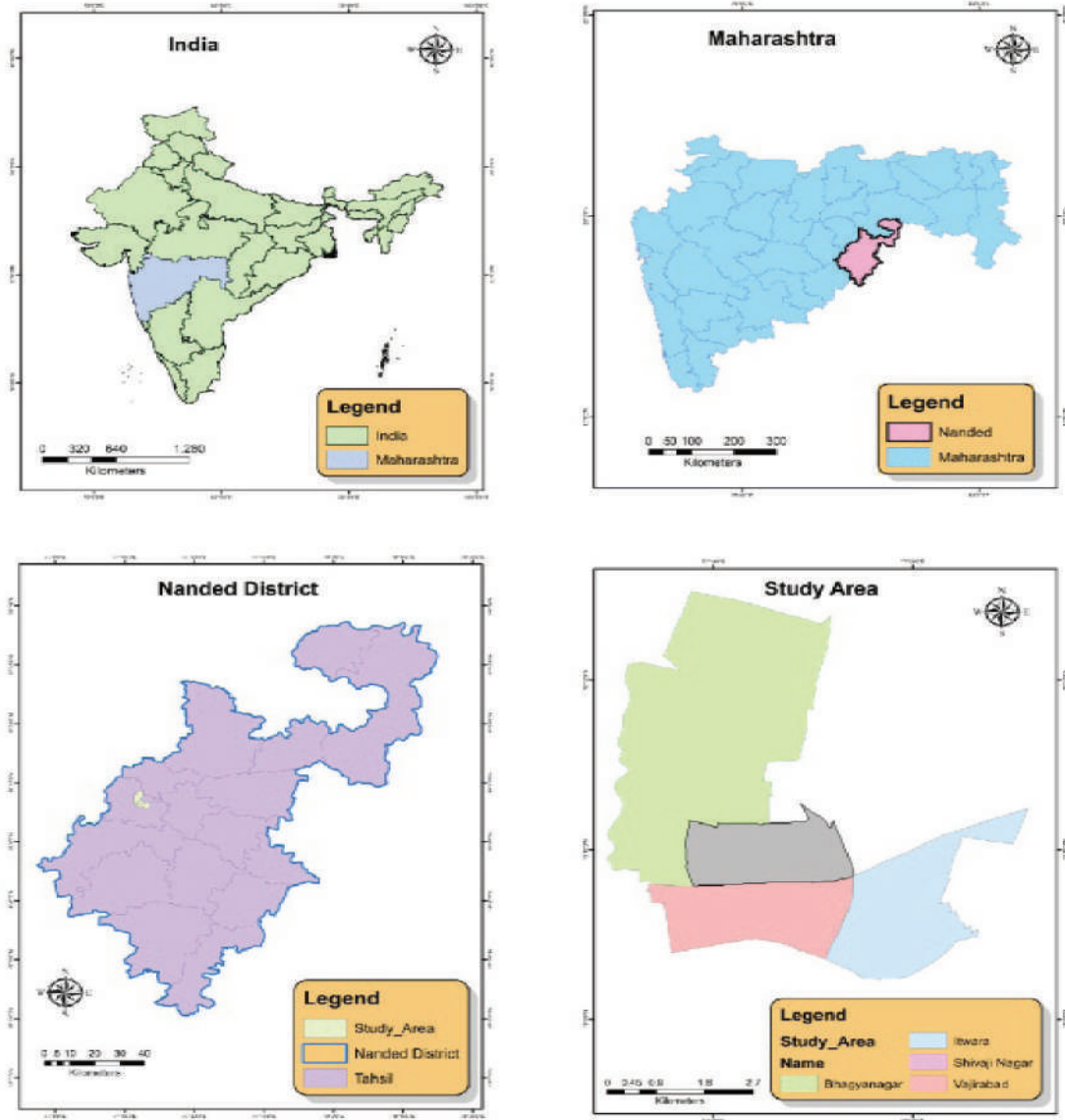
### **Study area:**

The Nanded city lies between 19°10' to 19°12' North latitude and 77°18' to 77°20' East longitude. The study area extends about 25km from west to east and 30km in north to south orientation. Administratively the entire region has been divided into four divisions namely Bhagyanagar, Shivajinagar, Vazirabad, and Itwara Police station area.

Transport Infra-structure:

Every City requires a network of transport for the development and mobility of the City. All production, distribution and travelling are interdependent. Efficient and reliable but yet competitive quick transport systems help development and it has been achieved in Nanded City.

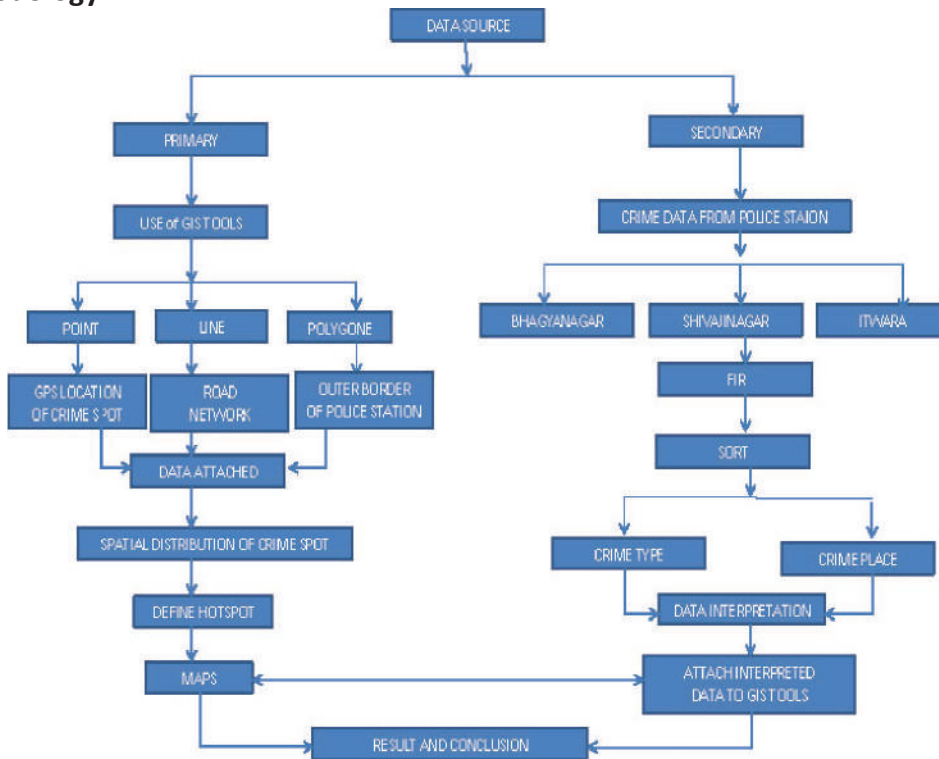
### Location Map of Study Area



### Objectives.

- To plot the crimes and analyze the Crime patterns.
- To develop spatial and statistical queries.
- To develop the tools analyzing crime in accordance of demographic features
- Identifying and locating hotspots.

## Methodology:



**Fig 1: Flow Chart of Methodology**

The above flow chart distinguishes between primary (direct measurement) and secondary (derivation from other sources) data captured for both raster and vector data types

### 1. Primary data source.

It distinguishes between primary (direct measurement) and secondary (derivation from other sources) data capture for both raster and vector data types. Primary data sources are those collected in digital format exactly for use in a GIS project.

### 1.2 Use GIS tools.

For every application it is essential to use the tool which is inbuilt in that application. In GIS system there are three major tools which are widely used for data presentation and making of geo-database. These tools are Point, Line, and polygon. These three tools are defined as follows.

- (a) Point is the feature of GIS which is used to spot the crime places
- (b) Line is important feature when road network have to design.
- (c) By the help of polygon feature it is possible to detect boundary of the present study area.

### 1.3 Data attache.

In this process all the data which is created by the help of the above tool, is attached in a single database, that is called geo-database.

#### **1.4 Spatial distribution of Crime spot.**

This method will be used for the purpose of separation of every crime which is sort. They all are stored in the single geo-database but it will be possible to distribute them in their category.

#### **1.5 Define Hotspot.**

After distribution of the crime spot then it will be easy to define hotspot of the crime area. It will be easy to define hotspot for the purpose to manage crime prevention in future and for the patrolling purpose also.

#### **1.6 Map.**

Map is the result of the every GIS working. Final map of every crime will be the result of the thesis.

### **2. Secondary data collection.**

While examining the required data for the study, a secondary data collection is done by doing some field work which mainly include the collection of soil samples , air pollution reports and ground water test reports

#### **2.1 Crime data from Police Station.**

Crime data is the basic needs of any type of crime analysis which provide the place, date, and type of crime which are responsible for analysis of crime.

##### **2.1.1 Bhagyanagar police station.**

From Bhagyanagar police station we have collected three years of FIR data,

##### **2.1.2 Shivajinagar police station.**

From Shivajinagar police station we have collected two years of FIR data

##### **2.1.3 Itwara police station.**

From Itwara police station we have collected two years of FIR data,

#### **2.2 FIR.**

FIR is nothing but the first investigation report.

#### **2.3 Sort.**

It is necessary to sort that data for analysis purpose because these data is too huge. Data are sorted mainly in three types,time, place and crime type. These three types have playing major role in the present thesis which is available from the police stations namely Bhagyanagar, Shivajinagar and Itwara Police stations. Instead of that Itwara police station provide only one year FIR data.

##### **2.3.1 Crime type.**

In this paper, two types of crimes are sorted. They are attempt to murder and robbery.

##### **2.3.2 Crime Place.**

Crime place is very significant for the purpose of detecting hotspot in the present paper.

#### **2.4 Data Interpretation.**

Data interpretation method is to understand the work which is going on. Data interpretation method is used here for the all types of the crimes.



## 2.5 Attach interpreted data to GIS tool.

In this step of the present methodology all the data which is interpreted will be attached to the GIS tool with the help of the attribute table, edit tool, save tool, buffered tool, export to PDF file and import to GIS geo-database.

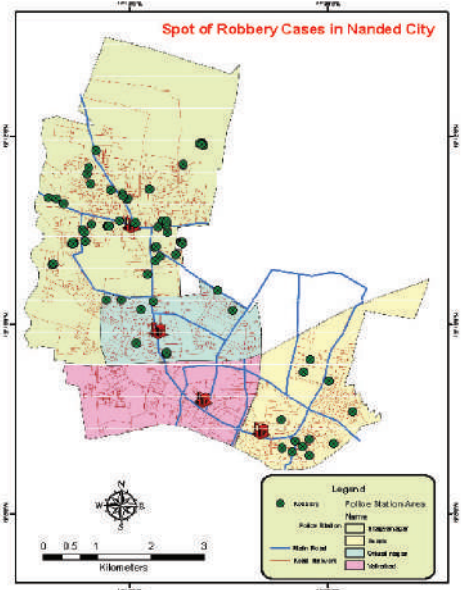
### Robbery cases.

Using spatial analysis tools they made an investigation about burglary and robbery patterns in Beijing. He used KDE method for hotspot detection. He observes that the transportation hub and shopping center had higher crime risk and for that he is working.

Robbery is the crime which is found in every district, the same nanded district has more than one hundred and fifty robbery cases registered. In present paper robbery spot showed with the mark on the above map. At very first light green area on the map showing Bhagyanagar police station, in that boundary of Bhagyanagar police station there around more than fifty robbery cases are registered in Bhagyanagar police station. Map showing more cases are registered in Bhagyanagar police station. Mainly the spots are near Bhaitanyanagar, Kabranagar, Purna road, Bhausarchowk, Gajananmaharaj temple area, deep nagar area. In south side of Bhagyanagar police station, Shrinagar area, Ramanandnagar.

Secondly as per the study of the map Shivajinagar has more than twenty five cases of robbery registered in FIR book. Shivajinagar police station has 4.67 square kilo meter area. In that area robbery cases are recorded are more than 20 cases. Highest crime registered north side of Shivajinagar police station area. Is as follows, rest house, Labour colony, Ganeshnagararea. From south side of police station, the area where robbery cases registered is Shivajinagar and Mahaveer society. In east side of the police station is Maganpura area and Sahunagar area. As the per the study of the robbery spot here it can be say that north side of the Shivajinagar police station can be treated redzone area for robbery cases.

At last Itwara police station police station has 3.16 square kilo meter area. Among that area there are more than twenty robbery cases are registered in FIR book.



### Attempt to murder.

Murder is another thing and attempt to murder is another thing in crime language. Attempt to murder is the crime which is related to physical assault actually but it is more dangerous than physical assault. That's why it considers the separate crime type in the present paper. Attempt to murder is the case offender assault victims. If victim is very serious in condition then it will be consider as attempt to murder case. Attempt to murder is happened in various places in Nanded city as follows.

Under Bhagygyanagar police station, more than twenty cases were registered. Among them four cases were registered from the area of Raj corner, another one is from Purna road, Bhausarchowk area, behind Bhagirathnagar area and from Ashoknagar area. Raj corner is the area where highest attempts to murder happened.

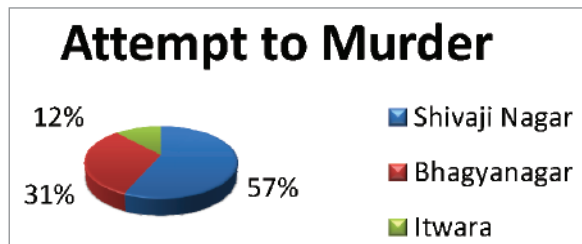
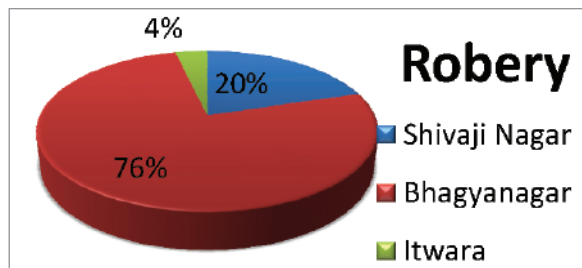
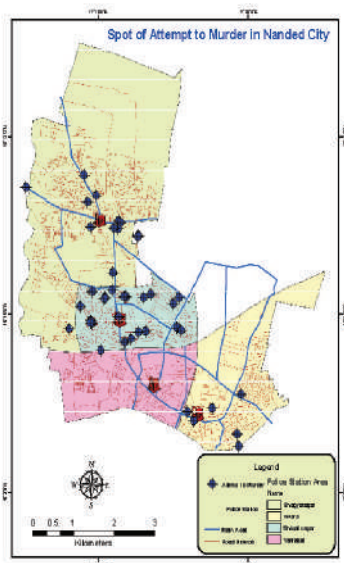
Under Shivajinagar area more than 24 attempts to murder crime was happened. Among that Jaibhinnagar area has more concentration, Visavanagar area then Shivajinagar, Gokulnagar, Vishnu nagar, Labourcoloney, Yashwantnagar, Dattanagar, Anandnagar and Baba nagar area having this type of the crime. As per the study of map, attempt to murder crime spot, here we can consider that east side of the police station having red zone area for attempt to murder cases registered under Shivajinagar police station.

Under Itwara police station there are more than six cases are registered. In the old Moundha, Gadipura, Kelimarket, Degllornaka, Sarafa bazar, Inner side of rever area these are the places where attempt to murder cases are registered in Itwara police station.

From all above police station there is Shivajinagar police station which has more cases of attempt to murder.

Robbery and attempt to murder is found udder they are where the impact of education is less, where people depend on for the money it had set to work on their day. Accompanying atmosphere is criminal. The physical structure is such that there is a majority of people who leaving there they are from slum area. Whose economical background is not much well. The area is as follows from bhagyanagar police station the area is Bhausar chowk, chatrapati shivaji nagar, raj corner area, and ring road and from Itwara police station area near the river like Sarafa galli, Arab galli, Karbala, Kumbhar tekdi. These are the area where robbery crime are found largely. And for attempt to murder cases half area under shivaji nagar police station. This area occupying by the poor people they are not well educated, they don't have any social background, they are poor in money inequality.

Sr. No	Police Station	Number of Cases		Percent	
		Robery	Attempt to Murder	Robery %	Murder %
1	Shivaji Nagar	72	43	20.17	56.58
2	Bhagyanagar	272	24	76.19	31.58
3	Itwara	13	9	3.64	11.84
4	Total	357	76	100.00	100.00



## Conclusion:

The proposed model is designed to prevent crime not for citizen but also for helping to police, there is no artificial intelligence mechanism is used to crime analysis. The model has done reasonably well in form of graph, maps and table. In this experiment crime type will be selected from the basis of available FIR data from the police station.

The study has found that a person turns to crime and has many factors like, geographical and environmental conditions. The geographic area being approximately criminal bent on environmental pollution and human changes it is increased due to economic inequality left a relationship of all these changes was the mental instability of a lack of social education. There is effective approach to the drought conditions, lack of education, economic and social inequality. All of these factors appear to be increasing challenges of crime in the city of Nanded.

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# An Unfortunate Infant: A Case Report

Dr. Anu Sasidharan, Shri Dileep Kumar



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## Abstract

The importance of a medico-legal case doesn't end by the conclusion of the autopsy examination. Medico-legal cases are unique and there are some important 'take home messages' to be taken from each case into the society for the benefit of the common man. Careful observations and inquisitive thinking can bring forth interesting as well as educative lessons. These lessons should be imbibed in the most effective manner not only by the doctors, police officers and judiciary but also by the society as a whole. We hereby present a case report of an infant who died due to injuries sustained to her head in the most unfortunate manner. We have presented the various medico-legal aspects and extenuating circumstances that are surrounding this case in adjunction with the existing literature. Thereby in this case scenario some light has been thrown upon those 'hard truths' that are commonly overlooked, in order to bring out the grey areas and moot points that can be involved in similar situations.

## Key words

Black Eye, Head Injury, Extradural Haemorrhage, Fall from height, Infant, Subarachnoid Haemorrhage

## Introduction

*"A surgical operation is attended with pain, and is for the benefit of the individual,  
An autopsy is free from pain, and is for the benefit of humanity."*

– Paul H Broussard (19<sup>th</sup> Century French Medicolegal Expert)

This is the story behind each medico-legal autopsy and it has always stood the test of time. The very fact that no two cases are alike itself makes it the need of the hour to understand the differences from text-book classical description during investigation. Individuals belonging to extremes of age groups are those who are usually succumbing to death following sustenance of injuries, especially if the major injury or the cluster of injuries is located at any vital organ or part of the human body.

Trauma is the leading cause of both morbidity and mortality in children and young adults. Among the different causes for trauma, falls and the subsequent vertical deceleration injuries are considered as the most common.<sup>1</sup> The risk of accidental falls from heights is common for all age groups, but the younger children are more prone to fall due to reduced cognitive ability for hazard awareness and insufficient development of neural mechanisms and sensory systems.<sup>2</sup> According to a western data, about 25 to 34

percent of all paediatric trauma admissions consists of falls<sup>3,4</sup> and 6 percent<sup>5</sup> of paediatric deaths are due to trauma following falls. A ten year period study was done in India (South Delhi)<sup>6</sup> consisting of 174 deaths (of both infants and children) due to accidental falls from height. These cases represented 22.56 percent of all deaths due to fall from height. The highest rate of deaths were in toddlers (39.65 percent) and this was closely followed by 26.43 percent of deaths that was seen in pre-school children as well as school-going children and the least death rate was seen in infants (7.47 percent). The most common cause of death was head injury (84.48 percent). In the same paper when the major fall sites were presented in the decreasing order of frequency, balcony falls ranked second highest with 24.13 percent.

### Salient Features of the Case

Body of an eight month old female infant was brought for autopsy examination at the Autopsy Centre in Department of Forensic Medicine & Toxicology at Amrita School of Medicine in Kochi. The baby was being looked after by her father at their residence. The family of the baby was residing on the first floor portion of an apartment. Her father was feeding the child with infant feeds. When he was engaged in preparing second serving of the feed; the baby crawled out from the room, on to the veranda and fell down through the gap (15 cms) of the balcony railings on to the corner of a concrete slab (visible portion of the septic tank) on the floor beneath (12 feet fall). The head of the baby had come in contact with the floor first. The baby was on treatment but later succumbed to injuries and was declared dead by the treating doctor.

During autopsy it was seen that the entire underneath portion of the scalp was markedly congested and haemorrhagic (scalp haematoma). There was no external injury on the scalp. Even though the skull was intact, there was thick extradural haemorrhage all over the brain (**Fig. 1**). Brain (350 grams) was softened and showed diffuse subarachnoid haemorrhage. There was black eye on the right side due to seepage of blood from the underneath portion of the scalp. Other than the injuries sustained to head, the body of the baby was normal. These injuries sustained to the head was given as opinion as to the cause of death. The manner of the death was given as consistent (accidental) with the history of the case (as said above). No element of foul play was seen during the inquest and subsequently in further investigation of the case.



**Figure 1:** Reflected scalp demonstrating the diffuse massive haemorrhage

## Discussion

A similar case reported in 2009 was that of an 18 months old toddler who fell through a gap of 10 cms in balcony railings at a hotel in the presence of his parents and siblings.<sup>7</sup> In fall from heights, the distance of the fall and the surface on which the body lands determine the severity of the injuries sustained. According to the data published in one of the studies,<sup>6</sup> the lowest height of fall was that of a six month infant from a bed and the greatest was that of fall from rooftop of a four-storey building. When the low height falls were compared with high height falls, the incidence of intracranial injuries was higher in those paediatric populations where the height of fall was less than 15 feet, and vice versa for height of fall more than 15 feet.<sup>8</sup> The higher incidence of head injuries for falls from low heights can be because of the lack of time available to protect oneself by extending upper limbs. Moreover in children because of the greater head weight in relation to the rest of their body, it causes them to topple head first. In falls from greater distances the individual can correct their body orientation to avoid landing on the head. Another publication supports the fact that infants were significantly more likely to be admitted for low height fall when compared to toddlers and again the high height falls were more common in toddlers.<sup>9</sup> Similar to these published literature sources, the case report herewith discussed also is that of an infant who sustained severe head injuries in spite of a low height fall of 12 feet.

Skull fractures are seen to be more common in pre-school children than in infants according to another source of published literature.<sup>10</sup> This is because the skull of infants is not rigid as the sutures have not got fused and are pliable to blunt impact forces. The 8 month infant in the case report also did not have any skull fracture lines during autopsy examination.

One of the points which require clarity in such instances of head injuries is regarding the manner of causation. Caution has to be exercised to differentiate accidental head injuries from non-accidental (child abuse) ones. The commonest manifestation of traumatic brain injury in abused children is Subdural haemorrhage (SDH).<sup>11, 12, 13</sup> Further when a study was done evaluating data (of 2 years) of children who had been hospitalised both for accidental and non-accidental head injuries, it was found that children with accidental head injuries were more likely to have scalp haematomas.<sup>14</sup> The case report presented in here had scalp haematoma with absence of SDH supporting the opinion as to the manner of death being accidental.

## Conclusion

Mostly fall from heights in infants and children cause a significant morbidity and result in a huge drainage on the judiciary as well as health-care systems. Small infants rarely sustain serious injuries from accidental falls and these should not bring forth false suspicions of child abuse. In the absence of clear signs of abuse, we authors felt that it is inappropriate to jump to the conclusion that such instances will be non-accidental (child abuse). As quoted in a study, the peak in the fall rates occurs in babies between 6 and 11 months of age.<sup>15</sup> This can be related to the onset of independent mobility and crawling of the infants. To reduce the occurrence of injuries caused by fall from height, strategies should be taken which includes parents' education about the mechanism of falls, awareness campaigns, increased parental supervision during playing activities and relevant policy measures regarding home designs.

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# Illegal Trade of Medicinal Plants Approaching Wildlife Forensics: Indian Scenario



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Mukesh Kumar Thakar, Tina Sharma,  
Vivek Sahajpal,

## Abstract

The illegal trade of medicinal plants involves a global black market, committed to illegal collection of plants and sale of medicinal plant species, which are prohibited by laws to earn instant money. The amount of wildlife crime and confiscations are mostly unspecified. Illegal trade in medicinal plant sector is growing with a steady rate due to which certain plant species are close to extinction. This review paper is intended to communicate awareness related to wildlife crime and laws related to regulating trade in protected plant species. The case studies of major plant species confiscations in the illegal trade like Red sandars, orchids, Trillium govanianum has been compiled to demonstrate the intensity of wildlife crime worldwide.

## Key words

Plant taxonomy, Illegal trade and Smuggling of Medicinal Plants, Herbal Medicine Authentication.

## Introduction

According to a survey carried out by All India Ethano Biological surveys (Ministry of Environment and Forest), India is endowed with more than 8000 plant species. Similarly, 95% of medicinal plants used by *Ayurvedic* industries (roots, leaves, bark, wood, whole plant, rhizome, seeds and flowers etc) are collected from wild resources [1, 2, 3]. Because of economic importance of this rich flora, medicinal plants are traded illegally without proper channel and licenses [4]. The amount of wildlife crime confiscations are mostly undisclosed but it is on constant rise and has observable effects on the dramatic decline in many species of flora in India [5]. The issue is of crucial importance because forest landscapes are decreasing and affecting the livelihoods of around 200 million citizens, or 20% of the population [7, 8]. The majority of farmers have smaller portions of land properties and insufficient knowledge to grow economical important herbs. The lack of skilled labor in rural high altitude areas and bureaucratic difficulties in obtaining permits to cultivate restricted species [9] is one of the major reasons that medicinal plants are collected from wild resources. This results in exhaustion of resource base, adulteration and non-availability of quality herbal drugs for household utilization as well as for exports.



### Trade of Medicinal Plants in India

Comparative analysis of export values of different countries during the year 1999 and 2009 has been shown in Figure-1, which clearly explains the increasing trend of trade particularly in case of India. The trade in medicinal plant was almost negligible in 1999, but during 2009 it shows firm position in graph approx 800 million US\$. Herbal raw drugs in India have a lot of business potential. The annual turnover during the year 2007-2008 crossed million dollars. The most recent Global index by UN Agency, India is sharing 8.13% in the global herbal market as compared to the neighboring china which is 28% shares. Almost 40 % of the medicinal plant speices are considered to be produced by India and China. A major part of high range Himalayan plants are wildly harvested and many species of these are becoming endangered or reaching close to extinction due to over-trading examples includes *Nardostachys jatamansi*, *Aconitum* species etc[16, 17, 18].

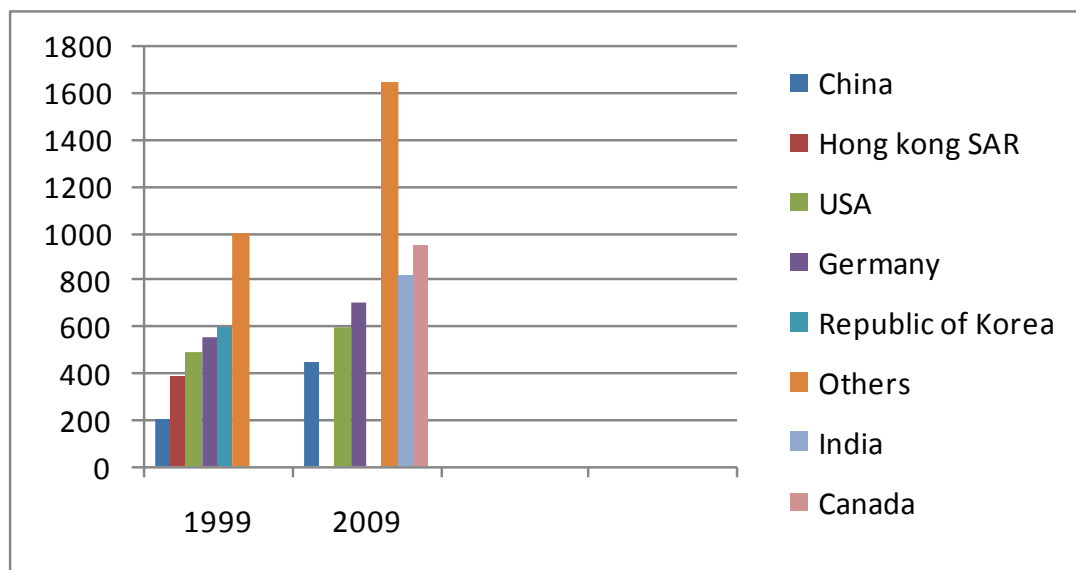


Fig.-1 Illustrates the comparative analysis of export values of different countries during the year 1999 and 2009 (Data from traffic.org)

### Regulation of Trade

There is a provision to regulate the trade of medicinal plants in India by using tools such as schedule VI plant species mentioned in “Wild Life Protection Act 1972”. Other laws dedicated for protection of wild flora are *Convention on International Trade in Endangered Species of Wild Flora & Fauna* (CITES), Foreign Trade Act 1992, Export Import Policy, Plant Fruit and seeds order 1989 and convention on Biological diversity (CBD) and The Indian forest act, 1927 are the main tools to regulate such trade practices [10].

In the constitution of India, section 48A and 51A (g) fixes the responsibility and obligation of the people and the government of India to protect and save our country’s national heritage [19]. Illegal trade in medicinal plant sector is growing with a steady rate. An additional influencing factor in wildlife crime is that there is a sky-scraping financial return with little possibility of being caught, and even if

the perpetrators are caught, they get minimum punishment and very rarely get the maximum punishment for the alleged crime to meet the potential financial gains [20]. In order to regularize the wildlife trade nationally, Indian Wildlife (Protection) Act, 1972 is in place, while internationally CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) takes care. CITES is an oldest international agreement adopted in March, 1973 between the governments of more than 170 different countries, India become signatories to CITES in Oct. 1976 [21]. The signatory countries are those who agreed to the conditions of the Convention and are known as Parties. The framework adopted must be respected by the Parties and also required to implement CITES through domestic legislations at the national level. The main aim of CITES is to ensure the protection of wild plant and animal species to become endangered or extinct by regulating the International trade. Trade in wildlife can be categorized in legal and illegal trades.

**Table-1 Showing List of Protected Plant Species Mentioned in Appendices of the CITES**

Botanical name	Botanical name	Botanical name	Botanical name	Botanical name	Botanical name	Botanical name
Aconitum species	Colchicum luteum	Rheum emodi	Salacia reticulata	Berberis lycium	Meconopsis aculeate	Drosera species
Atropa species	Commiphora whightii	Physoclaina praealta	Salacia oblonga	Bunium persicum	Lamprachaenium microcephalum	Didymocarpus pedicellata
Aristolochia species	Coptis species	Praltia serpumlia	Saussurea simpsoniana	Balanophora species	Orchidaceae species	Dolomiaea pedicellata
Aristolochia species	Ceropegia species	Prezwalskia tangutica	Shorea tumbugaia	Berberis aristata	Osmunda species	Dioscorea deltoidea
Angiopteris species	Cyatheaceae species	Podophyllum hexandrum	Strychnos aenea	Beddomes cycad	Nilgirianthus ciliatus	Epedra species
Arundinaria jaunsarensis	Cycadaceae species	Panax pseudo ginseng	Swertia lawii	Blue vanda	Nervilia aragoana	Hellotrophium keralense
Acorus species	Coptis teeta	Picrorhiza kurroa	Vateria macrocarpa	Coscinium fenestratum	Nardostachys species	Humboldtia vahliana
Artemisia species	Craterostigma plantagineum	Piper barberi gamble	Valeriaia leschenaultia	Costus speciosus	Meconopsis betonicifolia	Hedychium spicatum
Aquilaria malaccensis	Curcuma caesia	Rheum nobile	Valeriana iatamansi	Trichosanthes anamalaiensis	Pterocarpus santalinus	Gentiana kurroo
Angelica glauca	Cayratia pedata	Rhododendron species	Urginea species	Trichopus zeylanicus	Pitcher plant	Gloriosa superba
Arnebia benthamii	Coscinium eenestratum	Red vanda	Euphorbia species	Taxus wallichiana	Inula racemosa	Gymnema montanum
Adhatoda beddomei	Cyclea fissionaly	Rauwolfia serpentine	Eulophia cullenii	Swertia chirata	Ilex khasiana	Gymnema khandalense
Ampelocissus indica	Decalepis hameltonii	Saussurea gossyphora	Eulphia ramentacea	Strychnos potatorum	Iphignia indica	Gnetum species
Berberis kashmirana	Diptreocarpus indicus	Saussurea abvallata	Fritillaria roylei	Syzygium travancoricum	Janakia arayalpathra	Garcinia travancorica
Berberis petiolaris	Saussurea lappa	Ladies slipper orchid	Frerea indica	Madhuca diplostemon	Kampferia galanga	Hedychium coronarium
Kuth	Luvunga scandens	Madhuca longifolia	Gynocardia odorata	Hydnocarpus alpina	Hydnocarpus species	

The legal wildlife trade includes specimens of species that are not listed either in any of the three appendices of CITES or national legislations. The specimens of species which are listed in appendices CITES and still can be traded internationally with the appropriate documents. These documents include permits and certificates for import, export, re-export and also for those entering from the sea, issued by the CITES management authorities of the respective countries [22].

Medicinal plants are very frequently traded both legally and illegally. Legal annual trade of medicinal plants in the Himachal Pradesh state alone is around Rs 10 crore [23]. In one of the national level estimate, the volume and value of trade in air-dried rhizomes of *N. grandiflora* and *N. scrophulariiflora*

from Nepal only is 100-500 tons, which highlight the importance of the Himalayan states as suppliers of the products, belonging to plants Jatamansi and Kutkiwas [24]. As per Ministry of environment and forest, Govt. of India circular dated 4.10.2000, export of plant species tabulated in table (shown in Table-2) requires a 'certificate of cultivation' or Legal Procurement . Even with the certificates, exports are allowed through the ports of Mumbai, Kolkata, Cochin, Delhi, Chennai and Amritsar.

**Table-2 Shows a List of Prohibited plants species and their derivatives mentioned in Schedule-2, Appendix-2 of Export and Import Policy (1997-2002)**

Plant Name	Scientific Name
Beddomes cycade	Cycas beddomei
Blue vanda	Vanda coerulea
Kuth	Saussurea costus
Ladies slipper orchid	Paphiopedilium species
Pitcher plant	Nepenthes khasiana
Red vanda	Renanthera imschootiana
Sarpagandha	Rauwolfia serpentina
Ceropegia species	Species
Shindal mankundi	Frerea indica
Emodi Indian Podophyllum	Podophyllum hexandrum
Cyatheaceae species (Tree ferns)	Species
Cycadaceae species (Cycads)	Species
Elephant's foot	Dioscorea deltoidea
Euphorbia species (Euphorbias)	
Orchidaceae species (Orchids)	Species
Redsanders	Pterocarpus santalinus
Common Yellow or Birmi leaves	Taxus wallichiana
Agarwood	Aquilaria malaccensis
Aconitum species	
Mameera	Coptis teeta
Calumba wood	Coscinium fenestrum
Hatta Haddi	Dactylorhiza hatogirea
Kuru, kutki	Gentiana kurroo
Gnetum species	Species
Aromatic Ginger	Kamphera galenga
Spikenard	Nardostachys grandiflora
Himalayan ginseng	Panax pseudoginseng
Chirayatah	Swertia chirata

**Case Studies:** Some of the case studies in which plants or their parts or products were recently confiscated by various law enforcement agencies in India are listed below to provide a brief insight about the intensity of criminal activities going in forests or protected and preserved areas:

## CASE STUDY-1

### Illegal Trade in Red Sandalwood

Red sandalwood (*Pterocarpus santalinus*) is endemic to India [25] but is on the verge of becoming endangered worldwide. Basic reason behind the declining population of *Pterocarpus santalinus* might be related to the illegal harvest of the species for variety of purposes. This plant component popularly known as santalin has been used to prepare a natural dye to color the pharmaceutical preparations. The heart wood contains isoflavone glucosides and two anti-tumour lignans, viz., savinin and calocedrin, which is antipyretic, antiinflammatory, antihyperglycemic, hepatoprotective and also contains wound healing properties. Recently an illegal consignment has been seized from Siliguri (West Bengal state, India) which is bordering Nepal [26]. In view of the medicinal properties; this plant is in international grey trade, which is going on unabated because of scanty security and scientific limitation. Reported confiscations of different countries showcasing Red sandal wood trade are tabulated in Table-3.

**Table-3**

#### Showing Illegal trade in Red sandal wood across National and International Border

S. No	Media	Dated	Headline
1..	<i>South China Morning Post</i>	24.07.15	<i>Hong Kong customs seizes record 38 tones of smuggled red sandars handed</i>
2.	<i>The Indian Express</i>	19.07.16	<i>100-fold rise in seizures of illegal red gold' timber</i>
3.	<i>The Hindu</i>	07.09.15	Chinese national held with red sandalwood
4.	<i>The National</i>	21.04.15	<i>Woman offers Dh50,000 bribe to allow banned red sandalwood into port</i>
5.	<i>Times of India</i>	23.04.14	<i>420kg of red sandalwood seized, 9 Chinese detained</i>
6.	<i>gulfnews.com</i>	04.06.13	Dubai bocks smugglers with 253 tons of red sandalwood
7.	<i>Times of India</i>	07.10.16	<i>Three held in red sanders smuggling case</i>
8.	<i>Daily News &amp; Analysis</i>	18.07.15	<i>Two Navi Mumbai 'sandalwood smugglers' held</i>
9.	<i>Economic Times-</i>	19.07.15	<i>Huge quantity of red sandalwood worth several crores seized</i>
10.	<i>E Kantipur-</i>	19.07.14	<i>1046 kg red sandalwood confiscated</i>
11.	<i>Times of India</i>	20.04.16	<i>Customs seizes 17.5 tones of Red Sanders at Mundra</i>
12.	<i>indiatvnews.com-</i>	05.04.13	<i>Delhi Police arrests businessman smuggling out red sandalwood</i>
13.	<i>Daily News &amp; Analysis-</i>	19.07.14	<i>Overseas bidders head to Andhra Pradesh ahead of red sanders</i>
14.	<i>KanglaOnline-</i>	03.09.12	<i>3 crores worth of Red sandalwood seized</i>
15.	<i>Daily News &amp; Analysis-</i>	18.07.13	<i>Breakthrough: Cops nab kingpin in red sandalwood case</i>
16.	<i>Times of India</i>	07.04.14	<i>Sandalwood worth Rs 5.5cr seized, 2 held</i>

17.	<i>The Hindu</i>	30.1.16	Two international red sanders smugglers nabbed
18.	<i>The National</i>	22.5.13	Driver charged with smuggling endangered sandalwood into UAE
19.	<i>The Indian Express</i>	14.8.2015	Sandalwood smuggling: Another man held from Gandhinagar
20.	<i>Times of India</i>	01.9.14	Red sandalwood worth Rs 2 crore seized, four arrested

## CASE STUDY-2

### Illegal trade in Orchids

Variety of Orchids is distributed all over the world ranging from tropics to high alpine areas and is considered nature’s most exaggerated assembly of flowering plants. Orchids are also considered very important medicinally and regarded as ecological indicators. Orchids are grown as ornamental plants but many tribal communities are using it as herbal medicines in the different parts of world. In several parts of the world, the populations of orchids are declining due to their higher market demand. Numerous species of orchid are in jeopardy due to their habitat destruction and random collection from wild resources. Orchids are being included prominently in the Red Data Book of International Union for Conservation of Nature (IUCN) and in Appendix-II of Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)[27], where the international trade is strictly controlled and monitored. A variety of media showcasing orchid trade is tabulated in Table No. 4.

**Table-4**

**Showing Illegal trade in orchids across National and International Border**

S. No	Media	Dated	Headline
1.	<i>The New Indian Express</i>	20.11.16	Fresh survey of Indian orchids is the need of the hour
2.	<i>TRAFFIC - Wildlife Trade News</i>	24.11.15	Unseen harvest: Southeast Asia’s illegal orchid trade
3.	<i>UNCTAD</i>	01.10.16	Illegal trade accelerates wild plant extinctions, more transparency
4.	<i>Futurity: Research News-</i>	18.11.15	Illegal plant trade blooms in southeast Asia particularly orchids
5.	<i>Nature World News</i>	17.09.15	Illegal Wildlife Trade: Sale of Restricted Wild Orchids Goe
6.	<i>BBC News</i>	12.08.15	US battles to find - and save - illegally trafficked orchids plants
7.	<i>The Straits Times</i>	10.9.15	South east Asia’s blooming black market trade in wild orchids
8.	<i>Daily News &amp; Analysis</i>	24.07.15	Orchids join endangered species list
9.	<i>Science Daily-</i>	14.09.15	Large-scale illegal trade in hundreds of wild-collected ornamental orchids
10.	<i>Science Friday-</i>	13.11.15	The Dirt on the illegal plant trade
11.	<i>Assam Tribune-</i>	17.04.15	Illegal wild orchid trade galore in Lakhimpur
12.	<i>Myanmar Times-</i>	09.03.14	Orchid smuggling putting rare species at risk, warn experts
13.	<i>Los Angeles Times</i>	30.10.15	Man smuggling protected orchids in Lego box and My Pillow Pets
14.	<i>South China Morning Post (subscription)</i>	12.02.15	Wild orchids spotted on sale in Mong Kok despite legal protection
15.	<i>Republica</i>	27.03.16	One held with 64 kg of Sunakhari

### CASE STUDY - 3

#### Illegal trades in *Trillium govanianum*

*Trillidium govanianum* (Wall. ex D. Don) belongs to Melanthyaceae family. It forms a three leaves whorl at the summit of the stem and a purple flower in the centre. Leaves are broadly ovate, acute and conspicuously stalked. Flowers are brown purple with narrow petals. Roots contain trillarin, which on hydrolysis yield 2.5% diosgenin. In excess of exploitation scenarios from the natural habitats, the population of this medicinal herb is declining to meet the demand of pharmaceutical industry [28]. Reported confiscations showcasing *Trillium govanianum* trade is tabulated in Table No. 5.

**Table-5**

#### Showing Illegal trade in *Trillium govanianum* across National and International Border

S.No	Media	Dated	Headline
1.	<i>Greaterkashmir</i>	28.6.14	Smuggling of rare medicinal herbs unabated in Kupwara
2.	<i>Dailyhunt</i>	22.6.15	Illegal minor forest produce seized by the forest dept
3.	<i>Times of India</i>	20.8.16	Death knell For HP sanjeevais trillium govanium
4.	<i>Times of India</i>	10.6.12	Smuggling of nag chhatri unabated despite ban in state

#### Implications of Wildlife Forensics in Identification of Medicinal Plants in Trade

Because of the limited prosecutions in crimes related to Wildlife Forensics, Forensic community has started showing keen interest in the scientific examination and analysis of samples related to wildlife cases wherever confiscated [29]. At present two primary issues that are urgently required to be addressed and necessitate in framing different types of legislation to combat the wildlife crimes are; Firstly, the capability to identify a particular species of plants and second is the ability to determine whether a particular plant product can be linked with confidence to a particular individual species [30, 31] so that plants can be linked to restricted plant species.

The use of botanical identification in herbal medicine is complemented by microscopy for providing complete identification, when used in association with other analytical methods to supply invaluable evidences. Microscopic inspection of medicinal plant materials is very important for the identification of broken or powdered materials. The characters available in the powder are much fewer than the potentially available characters in whole specimens. This aspect of micro morphology of medicinal plants is yet to be studied keenly; hence literature is very scanty on it.

DNA barcoding is a powerful tool used to control trade in species placed on either CITES Appendix I or II and to trace cross-border wildlife crime [32]. The application of forensics to wildlife crime investigation routinely involves species identification based on DNA sequence similarity. This work can be hindered by a lack of authenticated reference DNA sequence data resulting in weak matches between evidence and reference samples. Chloroplast DNA to trace the geographical origin of Tropical timber (*Neobalanocarpus Heimii*) [33], DNA Markers of dried and intact leaves and polymorphism of microsatellites are important research developments which can be applied in wildlife Forensic Case work to apprehend criminals [34,35,36]. Mahadani et al. (2013) worked on the efficiency of *matK* in DNA barcoding *Rauvolfiadae* (Apocynaceae) [37]. Identification of herbal constituents at the species level was tested in a few ethno medicine based on the *matK* sequences by Mahadani et al. (2013) [38]

which would be immensely helpful in resolving identity of reference and standard samples related to confiscated material at the border.

A national level estimate of the volume and value of trade in air-dried rhizomes of *N. grandiflora* and *N. scrophulariiflora* from Nepal and estimates the importance of the Himalayan states as suppliers of the products jatamansi and kutkiwas was provided [38]. Identification studies on plants from India had been carried out in which Cousins *et al.* (2013) presented a photographic guide with accompanying morphological descriptions as a forensic tool, encountering illegally harvested South African encephalartos species focusing on stem fragments of six Kwa Zulu- natal encephalailas spp. harvested[39].

## Conclusion:

The unabated trade of medicinal plants can be stopped by increasing awareness of Indian forest act, CITES and export import policy among the forest guard officers and police officers to preserve the national heritage. The traded articles which are sent to the laboratories for identification requires a set of standard procedures and protocols to established databases according to their geographical origin. This paper presents identification of medicinal plants from legal perspective which will help the forest officers in maintaining law and order.

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