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Role of Community Policing In Responding to Natural Disasters - A Study Based on Kerala Floods - 2018

Dr. B.Sandhya, IPS*

I. Introduction

The severe monsoon rains which played havoc in the terrains of the State of Kerala, India, during June-August 2018 caused huge devastation in the affected districts and scarred the lives of inhabitants. About one sixth of the population of the State of Kerala was affected directly by the floods. The Government of India declared it as a level 3 calamity or calamity of a severe nature. Around 483 people died and 140 went missing. Property damaged is estimated to be Rs 400 billion.

Kerala received around 116% more rains than the usual rainfall resulting in dams filling to their maximum capacity and all the dams had to be opened, causing flooding of low lying areas. Rescue operations had to be undertaken. Kerala Police was given the mandate to lead rescue operations by the State Government. There was coordinated work by all stakeholders like Fire & Rescue Services, State Disaster Management Authorities, Revenue Department, Health Department, Water Authority, Electricity Board etc. The National Crisis Management Committee coordinated the National Level operations. National Disaster Response Force (NDRF), the Navy, Army and the Air Force joined the rescue operations.

The major stakeholders in the rescue operations, the first responders i.e. mainly police forces cannot be said to have been well prepared, as a flood of similar magnitude had struck Kerala only a hundred years ago (the deluge of 99 which happened in the Malayalam era of 1099, ie in 1924).

However, the rescue mission under the name 'Operation Jalaraksha' and rehabilitation and sanitation mission carried out under the name Operation Jalaraksha – II' were monumental as far as the history of Kerala Police is concerned.

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This study is based on the work done by the Research team of Kerala Police Academy. The documented data are accumulated from the direct interface of Flood Relief Camps, various stakeholder departments, and experiences of the police officers and community volunteers and people who confronted with the flood. Most of the volunteers and Police Officers unanimously opined during individual interviews and group discussions and reviews that the Janamaithri Suraksha Project, the State sponsored Community Policing Project, in vogue in Kerala for the last ten years was the main reason for the capability of the police force making them face the tremendous task with confidence. The community support and intimate knowledge of the community they already possessed as a result of the Janamaithri Suraksha Project enabled them to face the challenge with confidence. This is the backdrop to the quintessential role played by the Community Policing of Kerala in saving precious lives, which has prompted me to analysis the collected data in an objective manner.

II. Objectives

- 1. To find out the role of Community Policing in enabling the Kerala Police to respond to the Kerala deluge 2018.
- To do an objective analysis of Post Flood Resilience of the Kerala Police and Kerala Community.
- 3. To suggest a template for police to deal with disaster as first responders.

III. Methodology of Research

- 4. Direct interview of first responder police officers and affected people by visiting the affected areas, police stations and rescue shelters.
- 5. Direct interview of other stakeholder Department officials.
- 6. Analysis of secondary data from other sources like police officers, other government officers, NGOs, youth clubs etc. and archives.

III. Relevance

A natural disaster of a very serious dimension was never deeply researched or studied in Kerala so that disaster preparedness can be done based on empirical studies. The present study is only a stepping stone. Various stakeholders can make further studies and improve upon the disaster preparedness of the first responders as well as the disaster management team.

IV. Limitations

Though the research team visited all the major flood affected areas, in many of the police station limits seriously affected by flood, the officers were too deeply involved in the operations that they could not document their work.

V. Literature Survey

As per the Disaster Management Act 2005, a disaster means a catastrophe, mishap, calamity or grave occurrence in any area, arising of natural or manmade causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to property or degradation of environment, and is of such a nature of magnitude as to be beyond the coping capacity of the community of the affected area.

The Asian continent has witnessed, in the past, many calamities in the form of landslides, floods, tsunamis, famines, cyclones, earth quakes etc. Gujarat earth quake (2001), Indian Ocean Tsunami (2004), flood in Tamil Nadu, and Bihar (2017) are few disasters that have created havoc in India in the recent past. The most recent being Kerala Flood (2018), (Disaster Management Laws in SAARC countries edited by S.Sivakumar, Manohar Thairani and Lisa P Lukose-page1).

The onslaught of flood and course of recovery in Kerala as described by Muralee Thummarkudy¹ states thus:

People from all walks of life - fishermen to IT professionals, housewives and college students - came together to lend a helping hand. As the State administration was overwhelmed by a large number of rescue calls, many of them without our complete information and often in duplicate, young professionals sitting around the world quickly established a 24X7 help–desk that received the calls, eliminated duplicates, found exact coordinates from Google Earth and relayed precise information to the rescue teams. Relief camps came up all around and there was no shortage of resources. While a few camps did have a shortage of food or dress in the initial days, the bigger problem was that an excess of supplies came from near and far. Caste, religion, political ideology did not matter in the rescue and relief operation. It was Kerala at its best. While Kerala did exceptionally well in post-disaster rescue and relief, its performance in the pre-disaster situation was not as exemplary.

It is noteworthy to mention that the Kerala flood has witnessed a standout contribution of fisher folk community who braved the precarious flood situation and lent a helping hand in saving people who were marooned due to the deluge. As per the report, 'the fishing community of the State rendered phenomenal voluntary assistance towards search and rescue in the flood affected areas. Nearly 669 boats that went out with 4537 fishermen estimated to have saved at least 65000 lives'. The newspapers reported that the fishermen spent their own money to transport their mechanised boats and fuel. In areas where airlifting was not feasible, the people volunteered to rescue stranded and elderly people in small boats and even in vessels. The selfless service rendered by the fishermen response was that 'we didn't do it for monetary benefits. Instead, we could empathise with them. We did it for our own people'. The primary reason for the success

¹ Disaster Management Laws in SAARC countries edited by S. Sivakumar, Manohar Thairani and Lisa P. Lukose page

of the disaster management operations in Kerala was thus the people's response and their collective spirit. All rescue operations witnessed mass participation of people.

The State of Kerala could efficiently manage the flood calamity mainly with the frame work of decentralised administration. Senior IAS officers were deputed to each District to help in coordinating rescue and relief measures. Along with them, an elected representative, or minister of the State Government was deputed to each district to provide the necessary support. While the District Collectors were the overall in charge for their districts, the Superintendents of Police handled the responsibility of rescue operations. All the staff of local bodies such as panchayats and Municipalities were directed to work in relief operations; they were given freedom to use their funds in the manner they deemed fit.

The Chief Minister, Pinarayi Vijayan, handled the situation with great leadership, strong determination, immense patience, clear vision and perseverance. He faced media every day with data, facts and information to tackle the situation. In his own words, 'history will speak of Kerala not as a State that got defeated but as one that overcame the floods'.

Emerging role of Law Enforcement Agencies in Disaster Response.

Sheriff Leon Lott, contributor in the editorial² titled above in police one.com, writes that since 9/11, Law Enforcement's approach to every and all manmade and natural disasters has made a 180 degree turn. "We have an open line of communication with the US Army, the State Emergency Management Divisions and others".

"We are trained and equipped for everything from swift water rescue to providing food, water, clothing and other essentials to disaster victims, transporting evacuees, even fielding chainsaw teams to cut trees off houses and clear debris blocking roads for other emergency response personnel needing access".

In the FEMA blog³, Roberto Hylton, writes that in preparing for a disaster police officers trust in their training and capitalise on their knowledge of a community. During a disaster police officers play a key role in many operations including search and rescue, evacuations, door to door checks and maintaining overall public safety within the community.

Evaluating Community Partnerships Addressing Community Resilience

Community resilience has grown in importance in national disaster response and recovery efforts. The Los Angeles study by Rand Corporation used a social network survey to measure the number, type and quality of relationship among organisations

²Editorial: Emerging role of Law Enforcement Agencies in Disaster Response by Sheriff Leon Lott

³Roberto Hylton's write-up in FEMA blog

participating in the Los Angeles Community Disaster Resilience Project. It was found that the community resilience coalitions were initially larger and had lower trust among members than the prepared communities. Over time, these trust differences slowly dissipated. Expanding the network of organisations is important. (Evaluating Community Partnerships Addressing Community Resilience in Los Angeles, California – published in international Journal of Environmental Research and Public Health – Volume 15 – Number - 4 (April 2018) posted on RAND.org)⁴.

A Roadmap for Building Community Resilience⁵

RAND corporation identified a range of activities that can be implemented (or are already being implemented) by communities to build resilience according to specific local needs. The table shows examples of activities for each of the eight levers.

Lever	Activities
Wellness	Ensure pre-health incident access to health services and post- health incident continuity of care.
Access	Provide "psychological first aid" or other early psychological or behavioral health interventions after disaster.
Education	Bolster coping skills and psychological wellness by developing public health campaigns focused on these messages.
Engagement	Build the capacity of social and volunteer organizations (i.e., nongovernmental organizations) to engage citizens in collective action to address an issue or problem (e.g., a community development or service project).

⁴ Evaluating Community Partnerships Addressing Community Resilience in Los Angeles, California – published in international Journal of Environmental Research and Public Health – Volume 15 – Number - 4 (April 2018) posted on RAND.org

⁵ Building Community Resilience to Disasters, A Roadmap to Guide Local Planning by Anita Chandra, Joie D. Acosta, Stefanie Howard, Lori Uscher-Pines, Malcolm V. Williams, Douglas Yeung, Jeffrey Garnett, Lisa S. Meredith

Lever	Activities
Self- Sufficiency	Develop programs that recognize the vital role citizens can and must play as "first responders" to help their own families and neighbors in the first hours and days of a major disaster.
Partnership	Engage established and local organizations (e.g., cultural, civic, and faith-based group; schools; and businesses) and social networks to develop and disseminate preparedness information and supplies.
Quality	Ensure that all disaster plans have identified common data elements (e.g., benchmarks for disaster operations) to facilitate seamless monitoring and evaluation of health, behavioral health, and social services pre-incident, during, and post-incident.
Efficiency	Develop policies for effective donation management and provide the public with clear guidance on donations.

(Anita Chandra, Joie D. Acosta, Stefanie Howard, Lori Uscher-Pines, Malcolm V. Williams, Douglas Yeung, Jeffrey Garnett, Lisa S. Meredith)

An article titled 'How Governments respond to Disaster⁻⁶ by Daniel C Vock mentions that the Lowell Police Department had bought the police summer uniforms with base ball caps in place of the long sleeved polyester uniforms with peaked hats that they typically wear. But officers from Oregon who came for disaster relief tour to Puer to Rico to fight wild fires were stuck with their winter wear. An Emergency Management Assistance Compact (EMAC) was signed by several states in the U.S. Under the agreement, the Governor of the affected State must declare an emergency before requesting help from other States. The State asking for help is responsible for reimbursing States that send aid. For severe disasters FEMA will, in turn, reimburse the affected State.

It is a lesson that was reinforced in the aftermath of Hurricane Katrina, when volunteers swarmed the disaster area without clear instructions. The first problem that creates is that unexpected guests need a place to stay and food to eat which further strains the emergency relief effort. Public officials have no way of validating that, say, a volunteer who claims to be medical doctor actually is one.

⁶ 'How Governments respond to Disaster' an article by Daniel C Vock

A 'planned uniform' is also needed that is appropriate for the climate so that it would give police officers from jurisdictions across the US a consistent look so residents could identify the easily.

The Deluge of 99 (1924) Kerala

The research team examined the available documents in the Archives regarding the 1099 (Malayalam Era) deluge. A few facts are presented.

The relief operation

The Government of Travancore started emergency relief activities. The Government formed a Flood Relief Committee. In early August, more than a thousand refugees and refugee families arrived at various relief centers. There were 4000 people in Ambala-

ppuzha, 3000 in Alappuzha, 5000 in Kottayam, 3000 in Changanacherry and 8,000 in Paravur.

The Forest Department had ordered to distribute free bamboo and other housing for the purpose of providing housing for the poor. The government implemented the housing fund for the reconstruction and adopted a number of measures to keep the stability of food items.

Gandhi wrote about the Flood of 99 in his writings in Young India and Nava Jeevan. Give away money for the victims in Malabar (Kerala) by one day of fasting, relinquishing milk from your daily bread or save money from your relinquishment of food.

Gandhiji had mentioned about the stolen donation of a girl who stole 3 paise. He requested donations by selling women's gold jewellery and donate it for the victims' care and protection.

A few pages from the archives are given as Annexure -1

The Study

The Kerala Police Academy Research Teams visited and collected primary data and interviewed Police officers, other Department officers and affected people. We did this exercise along with relief operations being conducted by the Kerala Police including the training team. In that sense we were deploying qualitative designs of sociological study and participant observation.

Apart from visiting the affected areas and participating in relief activities, we organized meetings of Police officers involved in the activities of rescue and relief which the concerned District Police Chiefs / Sub divisional Police Officers or Inspectors arranged. In most of the affected Districts, the District Collectors also joined us during the visits or meetings.

I could also attend the regular review meetings held by the Chief Minister of Kerala on the rescue and relief operations which was attended by all Central and State Government

departments and forces involved in rescue/relief operations. As and when required, reports were sent to the State Police Chief on the matters observed. The gist of communication sent by the author to the State Police Chief during the observations and study are enclosed as Annexure -2

The following were the Districts seriously affected by the Floods 2018.

- 1. Pathanamthitta
- 2. Alappuzha
- 3. Kottayam
- 4. Ernakulam
- 5. Idukki
- 6. Thrissur
- 7. Palakkad
- 8. Malappuram
- 9. Kozhikode
- 10. Wayanad
- 11. Kannur

While visiting the various Districts affected by flood, the research team found one thing in common... the already established relationship of the Janamaithri Beat officers and Community Relations Officers helped the officers in carrying out the rescue and relief work with much ease and speed.

Janamaithri Suraksha Project:

The Community Policing Project of Kerala Police

Janamaithri Suraksha Project is the name given to the Community Policing Programme adopted by the Kerala Police. The project was launched in 2008, as a pilot project in 20 Police Stations, and was extended to 267 Police Stations in the year 2015. By 2017, the popularity of the project resulted in the scheme being implemented in all the police stations in Kerala. The activities of Janamaithri are built on the robust system of police public partnership engineered through regular and meticulous house visits conducted by beat officers in their beat areas. The Inspectors and SDPOs will be responsible for ensuring house visits and arranging regular training programmes for the Community members and police personnel with the philosophy of Community Policing. Beat Officers, CROs and SHOs will be responsible to make house visits and meet the Janamaithri Suraksha Samithi members regularly. The project has been launched after meticulous home work and it has captured the imagination of the public. The enhanced public participation in questions of safety and criminal justice has led to free registration of cases, better investigation and prosecutionThe "Suraksha Samiti" meetings and beat meetings have proved to be effective platforms for conflict resolution and mitigating even communal and political tensions.

In every Police Station a 'Janamaithri Suraksha Samithi' is formed. The Samithi endeavours to undertake and implement the 'Janamaithri Suraksha Project' in the limits of the respective Police Station.

With the help of the Station House Officer, the Circle Inspector suggests the names of persons to be included in the Samithi. The Sub-Divisional Police Officer then examines such names and the list of names are submitted to the District Police Superintendent. After due consideration and such consultation as he deems proper, the District Police Superintendent constitutes the Samithi and inform the concerned.

The Samithi has proportionate representation from among women and the Scheduled Castes and Tribes. Respectable citizens from the locality who are active in the educational and cultural field are included in the committee. High School/College Headmaster/Principal, Teachers, Retired Officers, Ex- servicemen, Corporation/Ward councilors, Merchants, NGOs, Workers' representatives, Residents' Association office bearers, Kudumbasree office bearers etc. are included in the Committee. Preference is given to include office bearers of Residential Associations.

Regular house visits and beat system empowered the constabulary in Kerala very well over a period of time. The beat officers transformed themselves into community leaders in their beat areas.

Rescue and Relief Operations and the Police

From 8th August 2018 to 25th August 2018, on an average more than 10,000 Police personnel were deployed on Rescue and Relief operations. On 23rd of August alone 33104 personnel out of the 61000 strong Kerala Police were on rescue duty. Every branch of police was on flood duty. Dedicated service of each and every section of police was singularly aimed at rescuing people striving for their lives in the deluge. This also gifted Kerala Police, a very unique life time experience. Apart from police personnel, police vehicles, police boats, police ambulances, police wireless sets and every logistics allotted to the Kerala Police became part of the Operation Jalaraksha. The limitations for police were many but the strength of Police was the fathomless public confidence in police and their unrelenting spirit of selfless service to save lives. This made Kerala Police write new chapters in their history of service with the motto 'Mridu Bhave Druda Kritye' (Polite but firm).

While electricity failed in the continuous rains, and floods and mobile towers got damaged, police wireless system sustained the communication network for the State. In all areas affected with floods, Police established Control Rooms with wireless communication facilities. Police ambulances were also deployed for Rescue operations along with Police personnel. Police made special efforts in conducting the inquest and Post mortem of the deceased persons for releasing the dead bodies to the relatives at the earliest.

In areas affected by landslides, Police rescued many lives ignoring the risks involved. The flood warning mike announcements were made by the Police repeatedly in every nook and corner. The familiarity of the terrain for the Beat Officers made the job effective. The Police had also gained prior experience of coordinating with other Departments after the implementation of Janamaithri Suraksha Project. This made their job smooth and naturally the Police emerged as leaders. Thus Police rescued 317573 people in total, apart from many animals rescued.

The selfless service of the Kerala Fishermen Community will be remembered forever in Kerala. The Police could take a lead role in bringing the fishermen, along with their boats to the affected areas in lorries, taurus vehicles etc. and in coordinating the rescue operations by leading them to the most needy areas. The Police could also find out food and shelter for these rescue operators in due course. On this aspect also, the already existing cordial relations with the community helped.

In all the Police Station limits, trauma care volunteers were available. police could coordinate with them as well

The presence of Student Police Cadets as volunteers during rescue and relief operations was an indicator of the service mindedness of Kerala's future society.

Providing logistics and protection to the Central Forces which arrived in due course also was done by the Police in an exemplary manner. The Special Control Rooms and Local Control Rooms started as per needs could intervene in situations as per necessity, making the rescue and relief efforts relentless. The special needs of senior citizens, pregnant ladies and children were attended to. Many roads had become damaged and special traffic arrangements were made in such places, avoiding calamities and facilitating transport of patients, rescued persons etc. Social media was utilised by the Police to communicate their messages and to receive messages. Police also was extremely alert to monitor social media to ensure that false reports were not being spread through social media. Whenever such instances were noticed, effective steps were taken.

As far as Relief Operation under the name 'Jalaraksha 2' was concerned Janamaithri Police made 236 trucks available loaded with materials worth Rs 8.4 crores. Apart from that, relief materials received at Railway Stations and Airports were also collected with the operation of Police. Distribution of relief materials, cooking of food and distribution etc., in the Relief Camps, Law and Order maintenance and safety of women and children in the Relief camps where every section of the society was staying together, was ensured only by effective presence of Police. Smooth exit of people from Relief camps to (their respective) homes was also effectively organised by the Police.

With the objectives cited in mind lessons learnt from a few Districts are selected and elaborated here.

Case Study 1:- Pathanamthitta District

District of Pathanamthitta was formed on 1 of November 1982. The circumference of Pathanamthitta is 2642 Square kilo- meter and density of population is 468 square kilo- meter. There are 6 municipalities, 4 taluks, 8 Block Panchayaths, 53 Grama Panchayaths and 5 legislative assemblies and 1 Lok Sabha Constituency. Pamba, Achankovilar, and Manimalayar, are known rivers in the Pathanamthitta district.

The deluge spread its outrageous havoc in the district of Pathanamthitta. The very sensitive hilly geographical areas and overflow of rivers like Pamba, Achankovil, Kallada, Manimala and Varattar were primarily responsible for the severe flooding. The true grit of police at the time of debris flow and landslide brought down the number of casualties. Police was imbibed with social commitment and leadership quality at the time of flood. The assets of police included industriousness and determination which was monumental in reducing the casualities to a great extent.

Deluge in the District of Pathanamthitta

District collectorate of Pathanamthitta had to organize 12 relief camps in the month of June-July in the taluks of Kozhanchery, Thiruvalla and Konni The incessant rain caused to set up 106 relief camps. 9050 people were rehabilitated from 3640 families in the district of Pathanamthitta. The heavy rain took 13 lives of people. 1417 hectare of agriculture, 845 kilometers of road were damaged. The incessant rain continued and the small and big rivers and dams were at their maximum capacity of holding.

District was under 'Red Alert'. The reports of heavy rain and debris flow in the suburbs of Pamba spread through the District by the middle of August. People ran for

their lives to the highlands. When Pambayar overflowed 30000 people were evacuated from lower areas of Pamba. The river overflowed through almost all populated areas of the district. River Pamba and her tributaries caused destruction of many houses on her banks.

The situation in the month among those was very appalling and debilitating. Transportation and communication system were affected due to the incessant rains. The number of relief camps were 42 on 13th of August 2018. The 15th of August witnessed the panic among those who lost everything except their lives. Messages were delivered to the fishermen who were later acknowledged as the 'Army of Kerala' requesting them to extend their help in the rescue mission. Fishermen were rushed in from Thiruvan-anthapuram, Kollam and Ernakulam districts by the police with their boats in heavy vehicles. Even though they reached by midnight only, they did not waste a single second and took part in the rescue operations along with the police. 15th of August witnessed the death of 5 people due to flash flood and debris flow.

On 17th of August rescue operations took place in Aranmula, Kidanganoor and Kozhencherry. Locally managed rafts were also used to reach the isolated nooks and corners unreachable by fishing boats. The surroundings of famous Aranmula Parthasarathy Temple premises and Police Station were completely flooded.

Ranni Police Station

Ranni was affected by the flood in the beginning. The only equipment police had at the time of flood were the private boats and rafts made by police. Department of forest arranged 24 bamboo boats and expert rowers. The incessant rain and heavy underwater currents made the rescue mission very risky even though they were expert rowers. 29 members of NDRF team arrived at Ranni on 15 of August 2018. A troop of 70 members from Pangod Military camp arrived that evening and 10 soldiers and tow boats from Kochi arrived at 7 O' clock.

The other rivers like Manimala, Achankovil, Kallada overflowed. Areas on the banks of these rivers were submerged into the water. Police reported that. River Achankovil overflowed and diverged into the areas of Panthalam town. The collaborative mission of NDRF, RAF, Police, Fire Force and native people undertook the risky rescue mission. By 18th of August, the number of relief camps in the district rose to 518. Rescue mission had to be continued in the areas of Thaluk of Thiruvilla. Affected people were distributed with food and water through choppers and boats, 3,683 packets of food were delivered to the people through the helicopter drop by the police. Rescue mission ended by 21st of August. Police and local government bodies concentrated on distributing relief materials. 21 boats of fishermen were partially damaged. The collaborative works of police, public, fishermen and other departments were the factors responsible to the success of rescue mission.

Pamba Police Station

Pamba river was reported to have water level risen on 9 of August 2018. The safety of pilgrims of 'Karkidaka Vavu' was well met by the police. The heavy rain caused the water to rise again. Ramamoorthy Mandapam, Hotel Complex, and Annadanam-

andapam were flooded. Devaswom Board was instructed to inform the pilgrims about the situation at Pamba via media. District collector, Mr. P.B.Nooh and Mr.Narayanan, head of District Police instructed to take proper precautionary measures for the protection of Sabarimala pilgrims. Flash floods were reported in areas of Pamba crossing over Triveni River. It was a Himalayan task for the police to send back pilgrims to their abode. Roads were blocked from Pamba to Nilakkal due to landslide. Police, who were assigned for the Monthly pooja duty, from KAP II, Battalion, rescued about 1000 Pilgrims from Tamilnadu and Karnataka and shifted them to Nilakkal.

Toilet complex were completely destroyed by landslide. Mobile phones were not operational till 15th of August 2018 and wireless sets were the only means to access the outer world. Police, boldly, tackled the with flash flood, overflow of Pamba and debris flow. Police rescued 16 people from an isolated building at Pamba Manalpuram.

The risky rescue mission was carried out by Pamba SHO Mr.K.S.Vijayan, CPO, Harikrishnan and two police officials from AR Camp. Report of three patients at Sannidahanam was received from district collectorate at the control room. Police rescued them with assistance of Fire Force from Pathanamthitta and Seethathodu under supervision of Pamba SHO K.S Vijayan.

Police shifted 150 families from Attathodu Colony to Nilakkal and Tribal school. Adivasi people, who were on collection of honey and forest resources, were not willing to shift so police distributed food to them,. The wounds and scars on the police officers' body had not yet cured, while the research team visited the place.

Aranmula Police Station

The areas of Aranmula got fully submerged into water. District collectorate gave instructions on 9th of August 2018 to the organizers of 'Uthrattathi boat festival' for the festival to be cancelled. Flood threat was announced through mike by the police. Sub Inspectors, Anil and Jibu rescued people, with the raft made using the stems of plantains. Since Police station was submerged, police officers on the terrace were rescued by their colleagues. Police rescued 27 girls from Kozhipalam Engineering College Hostel, and 10 people were rescued from Sathrakadavu PWD rest house.

Koyipram Police Station

Koyipram was another Police Station which was submerged into water. Rescue mission was carried out by using available materials like plantain stem, bamboo, tyre tubes, different sized ropes etc. Neglecting the warning of police, some people, remained on

their terrace but they were rescued by the Army and fishermen. Police station of Koyipram remained under water. All crime files and other office records were damaged too.

Konni Police Station

The different parts of Konni were flooded by water by the evening of 15th August 2018 especially, the areas of Marupalm, Muringamangalam, Attachakka, and Arupalam. Police evacuated people to safe land with the assistance of Janamaithri police and Janamaithri samithi members. Foreseeing the lack of power supply, police cautiously gathered generators, fuel and other materials for the proper execution of rescue mission. The great impediment that police faced, with the people of Konni was that it was not an easy mission for the police to convince them of the seriousness of the situation. The meeting place of Achankovilar and Kallar was uncontrollably overflowing and police informed the people via loudspeakers, in the initial stages, itself. Areas full of rubber trees, were submerged in the water very soon. Flood waters touched the first floor of many buildings. Danger could be avoided only because of the timely collaborative activities of police and forest, officials with the Janamaithri Community Members.

Rescue mission was later carried out by the expert divers with their bamboo boats from Adavi Eco tourism site. People were trapped in bricks factories and 22 people were rescued by the police. The areas where soil was excavated for building bricks had turned in to deep lakes. It was difficult for the police to discern these deep pits filled with water, since the area was flooded. Police rescued 84 people undertaking a very dangerous and risky mission.

Kokathode scheduled tribe colony was flooded suddenly. Incessant rain and flash floods affected the colony and it became marooned. Isolated scheduled tribe colony was looked after by the Janamaithri Police during the entire period of flooding. Police delivered freshly cooked food to them. Police, also dispatched a medical team including 3 doctors from Ernakulam along with food and clothes. 12 relief camps were set up under the jurisdiction of Konni.

Pulikkeezhu Police Station.

95% of the areas of 4 panchayats under the jurisdiction of Pulikkeezhu were submerged. Rivers Pambayar and Manimalayar which flowed around the two sides of the police station looked as if they were merged into one water body. Upper Kuttanad area, where police station was situated, was fully under water. Approximately 60 families of 246 people were rescued. 450 people were rescued from different parts under the jurisdiction of Pulikkeezhu Police Station and were shifted to various relief camps. People were initially unwilling to leave their homes and join the relief camps and Janamaithri police was able to convince them. Two casualties were reported. Sick persons, who were stranded in the Travancore Sugar Factory, were taken to

Thiruvalla via helicopter.

Yes, the seven lives were out of deadly torrential waters. Before setting out the journey, to my surprise, Joseph tenderly kissed the child on his forehead. A small drop of contentment rolled down my cheeks. In that inundation, I regretted, for the first time, not having a mobile phone to click. It was such an exclusive frame that was so rare to get.... Water water everywhere..."

(An experience narration by Shri Sunil Kumar, Inspector, Pathanamthitta)

The Fourth day of disaster...

"Information was received that seven people, including a six months old infant and an old woman aged 70 years, were trapped in a house at Arattupuzha. The frank of my boat was a man named Joseph. While going, Joseph talked with the people in the boat coming from the opposite direction. They had gone to help the same people we were going to help. They told us that they tried their best to help them and it was not possible to save them. Joseph looked at me and said 'Sir, if you have courage, we will save them'. I had already realized the expertise of Joseph who had taken around 60 persons to the shore and I asked him to start the boat. After some time, we found that Pamba River was flowing over the electricity lines. We stopped the boat again and moved half kilometre by rowing and pushing the electricity lines. Then we started the boat again and went for some distance. We reached near the overflowing Pamba River and we were unable to cross it due to roaring waves. But somehow we managed to reach the house. The house and the gate were ensnared in the heavy floods. The rear side was full of woods. I sat in the front of the boat and pushed away the trees to the sides. Joseph tried to move the boat forward. We could reach only 40 meters in half an hour. When we reached at the front of the house, someone called out from the top of the house and said, 'Sir, it is the compound wall'. Suddenly the boat collided on the wall. We found that it was impossible to move further. At that time Joseph asked me if I could manage the boat, he would smash the wall. But I hadn't rowed a boat in my whole life, I was afraid to do it in that dangerous situation. But I jumped into the water and tried to break the wall and after some time we could break it and took the boat towards the house. An 85 year old lady first, then an 18 year old boy having 110 kgs weight and then 3 ladies and two young men, were rescued one by one.

Discussion

After visiting the affected areas and Police Stations, a meeting was arranged at the District Police Office, Pathanamthitta.

The officers described how their previous knowledge of the terrains, the people and the help of Janamaithri Samithi members enabled them to ascertain who among the

citizens needed immediate help, like the senior citizens and those who lived alone. The rescue operations got a definite direction right at the beginning itself, only because the beat system.

An officer from Ranni Police Station told that there were 20 relief camps within Ranni Police Station limits in which 2405 people were housed. Many people did not move out of their houses in spite of water surrounding their houses. All such houses were identified by the Janamaithri Beat Officers and

Samithi members. Water, food, and medicine were supplied to them by the Janamaithri Samithi members.

Another officer became extremely emotional as he was asked, for the first time about his family. His family was also isolated and his house was totally flooded and he could not render any assistance to them as he was engaged in rescue operations. In fact, they were rescued by the Janamaithri Beat Officer of that area, which he came to know only after three days as all communication networks were damaged.

The above incident points toward the need of disaster preparedness for police personnel and their families.

In an article titled "The Role of Police During A Natural Disaster⁷;" Vernon Herron (https://www.linkedin.com/pulse/role-police-during-natural-disaster-vernon-herron)

mentions that law enforcement agencies should have a mandate that Police Officers have personal preparedness plans and kits for their families as well. These kits should be adequate enough to sustain every member of their family for a minimum of ten days. Many Police Officers were torn between reporting to work to assist in the response to Hurricane Katrina or staying behind to deal with the impact of the storm at home. A personal preparedness plan is just as paramount as the 'city's own disaster plan. Among the gaps revealed as a result of Katrina was the unexpected refusal of first responders including Police to not report during the response phase even after being ordered by the Police Chief prior to the

disaster. It was also mentioned that communication equipment and processes were inadequate or non-existent.

In the current study, the research team met District Police Chief and other levels of the hierarchy and every Police leader appreciated the efforts of the Police team in spite of several shortcomings in communication equipment and other logistics. In fact one officer remarked that each and every Police Officer was a leader as everyone had the experience of working closely with the community prior to the incident. Had the floods occurred some ten years back, i.e. before the Janamaithri Suraksha Project was in place, and the consequent beat system, such level of superior leadership qualities might not have been shown at every level of Police hierarchy, the officer stated.

⁷ The Role of Police During A Natural Disaster - Article by Vernon Herron.

Further, the information and intelligence gathering at the police stations facilitated by Janamaithri Suraksha Project, also paved a way to the rescue of hundreds and later in the smooth conduct of relief operations.

A Beat Officer, who saved at least hundred lives laid that the trust of the community in the police only helped him to achieve this heroic feat. He remembered how people even came to the Police Station carrying huge copper vessels in their home which could be used to rescue people. Another officer told us how some people in the locality, in spite of non availability of any communication means, reached Police Station with rubber dinghies at their homes, which they would use for fun rowing at the rivers during their stay abroad.

The above case study of Pathanamthitta District very clearly shows how the Janamaithri Suraksha Project and the consequent beat system and house visits paid dividend while responding to the Kerala deluge 2018.

Case Study-2 Alapuzha District:-

During the time of British rule, Alapuzha which is known as Venice of the East, was known as Alleppey. Alapuzha is a land of rivers like Venice.

The name Alapuzha was derived from the myth that a 'river flowed around a banyan tree' and other myth is 'deep river land'.

It is said that many places in Kerala were formed due to the stepping back of the sea. Almost all places of Alappuzha were formed due to this phenomenon. It is said that the coastal areas of Karthikapally, Ambalapuzha and Cherthala were part of Arabian Sea in 2nd century B.C and also parts of Vembanad lagoon, as commented by geologists in 'Messages of Unnineeli'. Sangha era literature also provides information about the geographical area.

As it is a coastal area, there are no forests. Alappuzha comprises of 6 Thaluks, 93 villages, 12 Block panchayaths, 72 Grama Panchayaths and 6 Municipalities. 36 Police Stations are there in the District of Alappuzha.

Chengannur Police Station

Chengannur was known as 'Shonadhri' in the ancient period. It is situated in the eastern part of the District, and it is a land of hills, meadows, paddy fields and streams. Chengannur is blessed with rivers like Pambayar and Achankovilar, including the tributaries of Pamba, Varattar and Manimalayar. Pamba flows through the heart of Chengannur. Chengannur Thaluk consists of 9 Grama Panchayaths.

Chengannur is the highest place in Alapuzha. Chengannur town is situated at 129 feet above the sea level. Pandanad, five kilometres away from Chengannur, is situated 5 feet below the sea level.

District Collector, B. Suhas, executed proper measures to deal with flood and he convened a meeting of District Police Chief, S Surendran, Sub Collector, Krishna Teja,

and other Revenue officials. The charge of Allapuzha Division was handed over to Ms.Krishna Teja, and charge of Chenganoor was handed over to RDO, Mr.Athul.

Gramapanchayath of Pandanad and Thiruvanvandoor were affected by flood in the first stage. These places are adjacent to river Pamba and are below the sea level.

Fishermen with their canoes, reached the flood affected areas from coastal areas. A Control Room was opened in Chengannur Thaluk Office on 16th of August 2018. Chengannur is mostly inhabited by NRI families; police received a lot of phone calls from foreign countries enquiring about the situation and their families. The communication system of police was very helpful during rescue mission. Telecommunication

wing of police established extra 'repeater stations' and activated CUG sim carob with the assistance of BSNL.

Many fishing boats arrived from Thiruvananthapuram, Kollam, Neendakara, Karunagapally, Thottappally, Arattupuzha, Thrikunnapuzha, Purakad, Amabalapuzha, Punnapra and Arthungal. Many boats were damaged due to concrete pillars and trees on the way. Collaborative work of NDRF, NAVY, Air force, CISF and Odisha and Thelangana Fire Force units along with Kerala Police made rescue of the affected population possible.

The Police station of Chengannur is situated at 129 feet above the sea level. Jurisdiction of the Police Station included the municipality, Mulakkuzhi, Ala, Puliyoor, Pandanad, Thiruvanvandoor and Cheriyanad Panchayaths.

People on the banks of Pambayar were shifted to relief camps by the police with assistance of Fire Force and ITBP Nooranad Unit. The western parts of Kavu, Idanad, Mangalam, Pandanad and Thiruvanvandoor were given warning about flood, which was

Mannar Police Station

ignored by people initially.

The Jurisdiction of Mannar Police Station includes the panchayats of Mannar, Bhudhanur, Chennithala and Triperumthara and some areas of Kurathyssery and Ennakkad Panchayats. Pambayar and Achankovilar are its boundaries. It is a land of diversity and includes paddy fields and streams. 50% of inhabitants are lives in the region prone to flood.

Police communicated the messages of flood warning to all villages with the cooperation of Panchayats. People, who were on the banks of river, were asked to shift to the safe lands or relief camps. Relief camps were opened in Mannar Nair Samajam Higher Secondary School and Umattikavu LP School.

Police started rescue operations with tyre tubes. Later, they were given small boats. The overflow of water in Achankovilar and Pamba occurred on 16th of August 2018. 90 % of region was submerged. The evacuation was done using tyre tubes and canoes and allocated boats. Home Guard, Mr. Shaji Gopinath and Mr.Johnson should be appreciated for their work in tandem with police. Lack of enough search lights, shored down the rescue mission.

Relief mission began on 18th of August. Various voluntary Organisations and SPC cadets volunteered in the distribution of water and food to relief camps. The Janamaithri project helped carrying out the relief work in a coordinated manner with great discipline.

Edathwa Police Station

The places, under the Kuttand Taluk, under the jurisdiction of Edathwa Police Station is under the sub-division of Chegannur. This place includes many paddy fields, streams and tributaries of Manimalayar, Pambayar. The station limits include boundaries of Thalavady and Edathwa panchayats; and eastern areas of Thakazhi Panchayat. The severe flood affected areas were Muttar, Kadamkara and Thayamkari.

Flood warnings were communicated to people living on the banks of Pambayar and Manimalayar river on 15^{th} of August 2018. People retreated to the highland areas of Edathwa Church (St. Ferona Church), St. Aloysius College. It was observed that many people were reluctant to leave their homes.

Police utilised two boats from Fire Force for the rescue mission and fearless efforts of local police could not be forgotten. Many cances from Ambalakad were brought and rescue missi-ion was carried out using these cances. The swift rising of water slowed down the rescue mission and they had to bring more boats. The reports of trapped bedridden patients were communicated to the station via phone and CPOs, Mr.Jithn, Vinu and others set out to rescue the people. It was not possible for them to go to Thayakari bridge. But they arranged small cances to rescue these people. Aged people were also reluctant to leave their homes, initially, but were successfully persuaded by Janamaithri Police. Thus, their lives were saved as the building collapsed later.

Police Station was completely inundated on 17th August 2018. River Pamba crossed National Highway and flowed through the Police Station. Wireless system was damaged. When their own villages and houses were under water, Policemen were busy protecting others as well as the Police Station. Since it was adjacent to coastal area, more boats and canoes could reach there for the rescue mission. Women police took the patrolling charge of relief camps. Police cooperated with Revenue Department to distribute relief materials in the relief camps.

Mr.Sathyam, who was a teacher from Mangalam Govt. H.S.S, made small rafts using thermocol and rafts were delivered to Payipad and Mannar police stations. The north area of Karuvatta and Karamutta were isolated. There were 1000 houses there. Fishermen reached there and shifted all people to the rescue camps. Four ambulances, which were working for the highway vigilant committee, they were working day and night. Ambulances were used to shift people to the relief camps. 6 tipper lorries were used in the camps for the distribution of food.

Ex-servicemen from Karuvatta and Pallipad provided help for rescue operations. The activities carried out by the ex-service men along with fishermen were appreciable.

In the course of police encounters with rescue mission, they were directly involved with the police and they helped the rescue mission when police were insufficient in number. They had skills to take the injured persons on the shoulder and cross the floods.

Manoj, Inspector, SHO

Kainady Police Station

Almost all lower areas of Kuttand are included in the Kainady Police Station limit. Only 30% of area is land surface in this jurisdiction. The station limit consists of 8 wards of Kavalm Panchayath and 13 wards of Neelamperur. Almost all the houses were flooded in the Station limit. People sought shelter in the camps of Changanacherry and Kottayam. It took 3 days for the police to evacuate and shift all people to the relief camps. SHO, Mr. George's house was under water and he could not help his family directly. 6500 people were rescued and shifted to relief camps by the collaborative endeavours of police and Janamaithri Samithi members. 905 people sought shelter in relief camps in Kottayam and Changanacherry. It took months for them to return home.

Pulinkunnu Police Station

It is on the bank of Pamba and 17 kilometers away from Alappuzha. The area was severely affected with flood in July 2018 and when they were recovering from havocs caused by the raging waters, the river Pamba uncontrollably overflew to this area on 16th of August 2018.

The warning regarding flood was communicated by police to the people.

Police convinced the people to evacuate the houses and find new shelters.

Jurisdictions of Pulikunnu Police Station under Kayinkari Panchayat, Kuttamnagalam, Vennattukaad and Kavalam were isolated. Police arranged active patrolling as a burglary was reported. Pulikunnu Engineering College was the tallest building in Kuttanad where thousands of people, other state labourers and students sought shelter. Police station was damaged and all the materials were shifted to the new building of Janamaithri Police.

When areas like C block and R block and Kuttamanglam were isolated, only police could render proper rescue mission because police were aware of the areas very well. Water Transport Department rendered a free of cost transportation to the affected people. Mr.Athul Nandharoop, student of Electronic Engineering, led a mission to repair electric items and electronic devices of affected homes during relief operations.

Crimes in connection with flood

Police registered 4 cases based on complaints from the relief camps. Police arrested a man who stole gas cylinder from an empty house. Police arrested a person who sold alcohol in the relief camps.

Discussion

Alapuzha was one of the worst affected districts in most of the places in the district lie below the sea level.

The research team engaged in relief operations along with the District Administration. The two ministers and people's representatives took meetings and reviewed the situation intermittently. We took part in such meetings also apart from visiting relief camps and affected areas. We conveyed our observations to the concerned.

The SDPOs, Inspectors and many officers were doing their duties in spite of their own houses affected by floods.

Mental Health Issues

In some of the relief camps, some children and ladies were found to be suffering from mental depression. Literature survey also showed that the police personnel as well as flood victims suffered from serious mental health issues after the trauma. (Ref. Article SAMHSA, Disaster Technical Assistance Center Supplemental Research Bulletin, First Responders: Behavioral Health Concerns, Emergency Response and Trauma.)⁸

We organised certain cultural programmes in the relief camps in which celebrities and singers and performers came and did stage performances and interacted with the relief camp inmates.

Also clinical psychologists and counsellors were brought in from Trivandrum to counsel the affected victims.

All the above activities were special programmes under the Janamaithri Suraksha Project.

The District Police Chief was requested to ensure that those officers who were having skin rashes due to contact with flood waters were given proper treatment. Those officers having stress and strain were identified and were given leave.

The post flood resilience of the community in Alapuzha District was in fact, the best possible case study as this District, being the most low lying, was the slowest to recover from the floods and, the longest to remain in Relief Camps. The Janamaithri Police ensured safe drinking water to the community by arranging big armentry canoe (Kettu Vallam) carrying drinking water to areas surrounded by flood waters.

⁸ SAMHSA, Disaster Technical Assistance Center Supplemental Research Bulletin - First Responders: Behavioral Health Concerns, Emergency Response and Trauma

While returning, after distribution of drinking water, the Janamaithri Beat officers, with the help of community members, also carried out a unique task of cleaning the back waters of the plastic bottles, toys and electronic wastes. The Janamaithri Police also did a tremendous job in sensitising the community about collecting the plastic and electronic waste and keeping it separately for the teams for cleaning to arrive and collect them, rather than throwing them from their houses into the surrounding back waters.

Template for Police to Deal with Disaster as First Responders

The Sreekandapuram Police Station, within Kannur District under their Janamaithri Suraksha Project, formed a project under the name WAR (We Are Ready) to deal with Disasters taking lessons from Kerala Floods 2018. They trained various volunteers after categorising them. In March 2019, the project was kick started.

The Sreekandapuram Janamaithri Suraksha Project (WAR We Are Ready)

Sreekandapuram is the center point covering Hilly areas of Kudiyanmala,

Payyavoor, Alakkode and Ulikal police station limits. There are possibilities of landslide and floods due to overflow of famous Kottur River which flows covering vast areas with abundant water through Podikkalam (Payyavoor PS limit), Sreekandapuram, Kottur, Adoor, Chengalayi, Kotayam (Sreekandapuram PS limits) reaching its extreme condition during rainy season. Diversion of water through pocket areas during rainy season creates much difficulty to common public, paving way to floods. There are possibilities of earthquake, which could result in huge loss of human lives.

For dealing effectively with disasters, various disaster management plans have been approved by the Govt. of India. In order to respond to these types of disasters happening within the locality covering hilly areas within Sreekandapuram, apart from plans introduced by both Central and State Governments, Sreekandapuram Janamaithri Police introduced an elaborate plan to meet unexpected disasters/ calamities.

The first people to respond to a disaster are those who are living in the local areas where the incident occurs. They are the first to start the rescue and relief operations. At present there is no such scheme in the local area to meet such a serious situation. As a response from the common people of the locality, Sreekandapuram Janamaithri Police, in liaison with local self-government, formed voluntary group consisting of different types of employees of various sectors i.e. from ground level employees to Medical Officers residing within locality. When Janamaithri Police proposed this Scheme of Rescue operation to face emergency situations, the people of various voluntary organizations welcomed and supported the initiative of police which paved way to form Squad named "WAR".

The first and foremost aim of this squad is to bring the situation under control whenever an unexpected disaster affects life of common people. Some of our working criteria are furnished below:-

- All members of "WAR" group will join together with police force, hold hand to hand for disaster relief and rescue operations and perform actions with discipline; safeguard public safety and ensure their participation according to the needs.
- 2. Provide immediate assistance to the most vulnerable sections of the population as soon as possible.
- To develop the spirit of mutual assistance, peace, and unselfish service for the people.
- 4. Conduct classes on Disaster Management.
- 5. Conduct workshops thrice a year and discuss about the future plans.
- Make sure that all persons within our service jurisdiction can swim. Conduct swimming classes with the help of Local Self Government in different areas.
- Conduct awareness classes with help of experts on the adverse effect of alcohol, drugs and other illegal activities among the public.
- Make the WAR Army ready before the monsoon. Find out the flood prone and landslide prone areas within jurisdiction, take necessary steps prior to monsoon season to overcome disaster situation and also conduct awareness classes for people residing in the areas.
- 9. Prevent the atrocities against women, children and the old aged.
- 10. Take action to prevent infectious diseases. Take precautionary measures in affected areas where disaster is anticipated.

As a first step of this Project, the Janamaithri Police had put up their suggestions before Sri.G.Siva Vikram, District Police Chief, Kannur and Sri.K.V.Venugopal Dy.Supdt.of Police, Taliparamba, who gave full-fledged support with innovative ideas to start Voluntary Service Army under the name WAR (We Are Ready) with the cooperation of the general public. Sri.V.V.Latheesh, Inspector of Police Sreekandapuram and Sri.K.V.Raghunath, SI of Police (Gr) Sreekandapuram took initiative to form WAR. After getting this strong background support, Sreekandapuram Janamaithri Police, with participation of these senior officers, convened meetings with various voluntary organizations, interested local people, doctors, advocates, ward members, social workers etc. residing within Sreekandapuram Municipality and Chengalayi Grama Panchayath at various centers on a weekly basis. Awareness programmes for local public, school and college students were conducted.

Planning was done to form a Voluntary Army consisting of 500 members who have skill in 50 different fields and service-mindedness to face any types of disasters happening within their range. All the team members of WAR group would perform voluntary service with full dedication. It is the dream of Sreekandapuram Janamaithri Police that this initiative from their part would become a role model for the entire State

of Kerala in the days to come. There are many people within Sreekandapuram and its suburbs, who are interested in voluntary service but it is noticed that their services have always been limited within their local areas. The aim of Sreekandapuram Janamaithri Police is to spot people who have extra ordinary calibre to face disasters and then coordinate them by providing proper guidance. Separate squads are formed to face different types of disasters, thus extending their service from their localities to the next level where need arises.

It is to be noted that, Sreekandapuram Janamaithri Police with the help of Sreekandapuram Municipality and Chengalayi Grama Panchayath authorities conducted Relief and Rescue operations in 2018 Floods, which mainly included construction of houses to backward class persons facing poverty, maintenance work of dilapidated houses, providing financial aids for better treatment etc. These activities gave lot of confidence to start this Project, which is under progress.

The details on how to find out apt people with social commitment as volunteers and how to utilize their services are furnished in the report. Sreekandapuram Janamaithri Police had conversations with the selected representatives and social workers to know their suggestions. In emergency situation, the volunteers of the particular entrusted areas should reach the place when the liaison officer (appointed from Police) calls for disaster management. They will be engaged in the rescue operations voluntarily. Around 500 volunteers in the age group of 18 to 55 years will be always ready to work when an emergency situation arises. In some areas if the situation demands, the age limit of 55 years won't be taken into consideration.

It is a clear cut decision that those who have been involved in any crime cases or antisocials activities won't be included in the WAR force. The consent letter of those who are members of the force will be kept according to their selected field of service at Police Station and separate register will be maintained for the same at Police Station. The photos with consent letter of the members will be posted in the register with attestation. These service volunteers of Team WAR will be provided uniform and identity cards which should be used during the time of their volunteer work.

First of all, different teams have to be formed under one selected Liaison Officer from police (having mobile phone with message facility) who will control and supervise teams of different disaster relief and rescue operations to be implemented at the time of unexpected disaster occurring within the jurisdiction. Details of some of the teams are mentioned below:-

1. Flood rescue and relief operation: -

On receipt of flood alert, liaison officer will make contact with flood disaster rescue and relief group members over phone, coordinate with all of them at a particular place, impart rescue and relief instructions to them, move to each flood affected areas and begin operations without delay. These teams must comprise of swimming experts with equipment, diving experts, Boat/Yacht owners and drivers, Recovery van drivers/Owners

/Khalasis, KSEB teams, medical teams comprising of doctors, nurses, nursing assistants with medical equipment and medicines, ambulance with driver, Van carrying emergency refreshments, drinking water etc. A protocol is laid down for the volunteers while a warning of flood is given.

2. Land Slides

At once Liaison Officer will inform the trained WAR Volunteers to reach the location. Liaison Officer will bring necessary equipment kept at Police Station to the spot. The volunteers too will reach and follow the laid down protocol.

3. General

There are also special volunteers groups to deal with road accidents, presence of wild animals, epidemics etc.

Liaison Officer will be the overall charge of the WAR rescue team. Separate teams of WAR Volunteers will be formed for action during each disaster. There will be separate Asst. Liaison Officers for every rescue team. WAR Volunteers will inform officer in charge/Liaison Officer every incident before attending the rescue work. Liaison Officer and all Asst. Liaison Officers will keep a separate list of every group.

Details of 50 Service Areas to be included in the Disaster Management Team:-

- 1. Ordinary workers (Scaffolding etc.).
- 2. Wood cutters (with machine and axe).
- 3. Coconut tree climbers.
- 4. Bush cutting machine workers /women workers.
- 5. Well Diggers.
- 6. House builders.
- 7. Concrete workers.
- 8. Carpenter.
- 9. Mason.
- 10. Painting workers.
- 11. Coolies.
- 12. Quarry workers.
- 13. Cooks.
- 14. Drinking water supply workers (With vehicle and tank).
- 15. Wiring workers.
- 16. Plumbing workers.
- 17. Motor Mechanic.
- 18. Light and Sound workers (Decoration).

- 26 Dr. B.Sandhya
 - 19. Auditorium owners.
 - 20. Boat/Yacht owners.
 - 21. Swimming experts with equipment's.
 - 22. Diving experts.
 - 23. Auto drivers/Owners.
 - 24. Lorry drivers/owners.
 - 25. Taxi drivers/Owners.
 - 26. JCB drivers/Owners.
 - 27. Recovery van drivers/Owners/Khalasis.
 - 28. Ambulance drivers/owners.
 - 29. Ex-Fire service men.
 - 30. Ex-Police men.
 - 31. Ex-Military men.
 - 32. Ex-Health Dept. persons/Other Ex- dept. staff.
 - 33. Fire Service.
 - 34. Forest.
 - 35. KSEB workers.
 - 36. Nurses.
 - 37. Doctors (Allopathy, Homeo, Ayurveda).
 - 38. Excise Department.
 - 39. Teachers.
 - 40. Pensioners.
 - 41. N.S.S Volunteers.
 - 42. Telephone/Communication.
 - 43. Medical shop owners/Pharmacist.
 - 44. Tailors.
 - 45. School Management.
 - 46. Councilors/Psychologists.
 - 47. Advocates.
 - 48. Social Services/Art and culture.
 - 49. Business men.
 - 50. Medias.

Duration of Work and its Working Agenda

The voluntary Army "WAR" is a permanent system. Whenever there occurs a shortage of members in the team, the monitoring team will report the same with the permission of the Executive Committee and necessary steps will be taken to fill the shortage at the earliest. All activities of the team will be under control of the Sreekandapuram Janamaithri Police authorities.

The Distribution Ceremony of Jackets to volunteers of newly formed WAR (We Are Ready) under Sreekandapuram Police Station

More than 500 people, from different fields under Sreekandapuram Police Station limits, came together and assembled in the courtyard of Sreekandapuram Police station as part of WAR organization, considering the programe as their own. The function became a symbol of discipline, and unity. All the volunteers as well as audience reached the venue well before the scheduled time of the event. The Police chief and the DySPs also reached in time. Registration process started in the morning itself and badges were issued to all WAR members. Singers among the audience and volunteers sang songs which made the stage blessed.

The distribution of jackets to the WAR volunteers was held at Sreekadapuram Police Station on 2nd March 2019 and was inaugurated by the District Police Chief Sri.G.Siva Vikram IPS. The function was presided over by Sri.P.K.Sudhakaran, Dy.Supdt. Of Police, Taliparamba. Sri.K.V.Veugopal, Dy Supdt. Of Police, Kannur who explained the project. Sri.P.P.Raghavan, Chairman of Sreekadapuram Muncipality and Smt.K.K. Rathnakumari, President of Grama Panchayath, Chengalayi.

The Floods 2018 made the Police Forces of Kerala learn a lot of lessons. Under the auspices of Janamaithri Suraksha Project, a number of Police Stations resolved to work together with community during calamities. It is a matter of delight to note that Sreekandapuram Police Station made a model project which could be taken as a template for dealing with disasters as Police being the first responders.

Conclusion

The Janamaithri Suraksha Project was introduced in Kerala as a fully Government sponsored project with a view to reduce crimes and to ensure better Police-Public partnership and cooperation; and also to ensure community support in the safety of community. During the deluge, the Janamaithri Suraksha Samithi members joining hands with the police and the other departments rose up to the occasion and took lead role in rescue and relief operations, saving precious lives. They were also monumental in post flood relief operations.

Because the Janamaithri Beat Officers knew every nook and corner of the beat areas, the fishermen with their boats could be transported even to the remotest areas precisely. The house visit system which was in place helped the beat officers to identify houses where needy people, especially senior citizen, women and children lived. The felicitations received by Mr.Rejoob Khan, a beat officer from Mannar Police Station, Community Relations Officer (CRO).K.K.Vijayakumar and many other Janamaithri police officers bear ample testimony to this fact. When Veeyapuram, a place in Alappuzha district was inundated, the Public Relations Officer (PRO) of the station sought the immediate help of Janamaithri Samithi members, who, in turn, made all the necessary arrangements converting the schools, auditoriums and the worship places in

the locality to rescue shelters. This timely action, which provided great relief, would not have been possible without the intimate relationship the police shared with the public achieved through various Janamaithri Schemes.

Within many Police Stations like Kainady, Ramankary, Pulinkunnu, Nedumudi etc., only due to the excellent community relations of Beat Officers, the boats, house boats etc of private persons also could be roped in for rescue operations instantly.

The role of Janamaithri Police in the post flood scenario was also vital. In relief operations carried out in Alappuzha District, a prgramme viz. 'Santhvanam' was organized by the Janamaithri Police through which cleaning kits, kitchen utensils and other essential items were distributed to the most needy. Police personnel were also in the forefront, leading the cleaning operations in the most difficult areas.

Cultural programmes were also organized under the name 'Santhvanam' to reduce the mental stress of the people in the relief camps.

A programme which took care of the special needs of children under the name 'Hope-2' was organised by the District Police Chief, Alappuzha. This took care of the psychological counselling much needed after the traumatizing experience.

The study concludes that every Police Station in Kerala must have Disaster Management Protocols and Programmes in place, made practical through drills under the Janamaithri Suraksha Project. Undoubtedly, it was only through the deep trust and confidence public reposed in Police, established through Community Policing, and the knowledge and intelligence we gathered through our close interactions with the public, we were able to join hands in organizing a very effective rescue and relief operations saving precious lives during this unprecedented calamity that struck our land in the year 2018.

Annexures

Annexure I	- Pages from the archives (page 35 to 43)
Annexure II	- Gist of communications sent to the State Police
	Chief during the observations and study (page 44 to 49)

Annexure I

Gist of letter No.117/Camp/ADGP (TRG)/2018 Dtd:29.08.2018 addressed to State Police Chief, Kerala

Visits were made in the flood affected areas in Chengannur, Kuttanad, Aranmula etc. and associating with relief activities.

A few most important points on which we may take action as per my assessment of the rescue and relief work and ongoing activities are furnished below.

General Matters

- 1. Carrying enough drinking water to each one of the affected houses cut out of potable water supply is a very difficult task.
- 2. The cleaning of water sources like the wells seems to take a lot of effort. It is time-consuming.
- 3. Many houses especially in Ezhikkad colony (Pathanamthitta) and Kuttanad are partially destroyed and can collapse completely at any time. Living in such houses is dangerous. Providing container houses, tent houses etc to such people is a viable solution to avoid further disaster.
- 4. Burning of waste materials and plastic and throwing of waste into rivers by families/persons engaged in cleaning operations cause severe environmental problems. Suitable mechanism for removal and dumping of such debris need to be evolved.

Large amount of electronic waste generated as a result of the flood is seen floating in the water and are sometimes dumped into the water bodies. This leads to the release of poisonous metals like nickel, cadmium and lead into the water which pollutes the water bodies as well as its living organisms. A mechanism for collection and proper disposal of e-waste shall be chalked out. Also, proper awareness needs to be generated among the public against this by means of advertisements, slogans, campaigns etc. through radio, TV, IPRD etc.

- 5. Ward level comprehensive campaigns and efforts through ward level teams are required regarding waste disposal, hygiene, supply of drinking water etc. Janamaithri Beat Officers and Samithi members can play a remarkable role along with ward members and other Department officials. A protocol may be chalked out. Loss assessment with respect to buildings, household utensils, agriculture, loss suffered by school going children, psychological impact etc. may be done by the designated team.
- 6. Janamaithri Beat Officers and Janamaithri Samithi members have played a major role in reducing casualties through timely announcements, communication networking and rescue operation. This need to be appreciated and acknowledged. Such a gesture will urge the Janamaithri team to work further in cleaning and rebuilding efforts, and also motivate them to work in future disaster situations.

Police Matters

- Many Police Stations and Police Quarters have suffered extensive and severe damages in the floods and these buildings could be grounded any time. Alternative viable solutions like containers houses, tent houses etc. are to be constructed temporarily to avoid any further disasters.
- 2. Many Police personnel engaged in rescue operations suffered heavy losses to their houses and house-hold articles. Adequate help and compensation shall be

provided to them at the earliest. Moreover deduction from their salaries shall not be done at least for the next 3 months. Psychological stress of many officers is too high as they are engaged in relief duties even now without caring for their own houses and family members. Senior officers have to attend to this. Police Housing Society may chalk out mentoring schemes.

- 3. Each SP/Unit head may be asked to hold a sabha within 3 days. Any officer, staff including CF should get a chance to put forward his/her flood related grievance. This shall be recorded and put in minutes and sent to PHQ.
- DPCs may be asked to appropriately reward Police Officers and Janamaithri Samithi members who displayed extra ordinary courage and compassion in rescue and relief activities.
- Flood-resistant buildings (built on pillars/columns) shall be constructed for the Police Stations (Aranmula, Ramankary) and houses located at flood- prone, low lying areas.
- 6. As the Police Stations are the first and immediate response systems to any disaster, stations ought to be provided with enough dinghies, life jackets, life buoys, ropes etc. to effectively deal with rescue operations during floods.
- 7. Certain Police Stations require speed boats urgently for relief activities. These shall be provided.
- Most of the Police personnel undertaking rescue operations were seen wearing towels, bermudas etc. Designing of appropriate uniforms to be worn by Police personnel when engaged in rescue operations would be ideal.
- 9. Many lives were saved due to active intervention and co-ordination of Janamaithri Beat Officers and Janamaithri Samithi members. It was reported that Beat officers could easily ascertain the members in different houses as a result of house visits. Accordingly, rescue operations could be directed to houses were senior citizens and other aged members were living alone and thus they could be timely rescued. Many officers commented that the beat system followed helped them immensely in rescue operations. The Beat System should be strengthened and the service of the Beat Officers may be utilized to ascertain the losses suffered to flood victims.
- 10. Appropriate proformas are to be developed for properly ascertaining the losses suffered by flood victims.
- 11. Post-cleaning operations, a committee each may be formed including JM Police Personnel, JM Samithi Members, ward members, members of LSGD etc. in the Panchayath/Municipality/Corporation areas. The committee may visit affected houses ward-wise and distribute household articles and other essential commodities. Such initiatives are already underway in some places. Others should emulate this good work.
- 12. GIS crime mapping software could have been used extensively to manage flood rescue. During disasters, we may consider using it even at beat level too apart from only SHOs and above. Hydrology map is already in use. However, other

parameters may also be added to it.

- Hot line with KSEB, Dam engineers, Irrigation Engineers, SDRF and Meteorology Department, ISRO, Satellite Control Room and Fisheries Control Room may be established.
- 14. A few megaphones may be made available at Police Stations apart from fitting every Police vehicle with a megaphone. A siren may be fitted in every Police Station with a protocol to operate the same as a warning signal.
- 15. A disaster management module shall be made and training may be imparted for all accordingly. DIG, KEPA has been asked to start with the work.
- 16. Officers from flood affected areas may be asked to write case studies and share these with the training branch.
- 17. All vacancies in RRRF Battalion may be filled up forthwith and trained men shall be made available. Already trained men shall be regrouped and training shall be imparted upto Police Station level.
- 18. A State Level Disaster Management Police Control Room may be formed which shall be manned by a team from RRRF.
- 19. Due to Global climatic changes, we are likely to face more cyclones and disasters in future. Hence, all the above preparations shall be accomplished without any delay.

Gist of letter No.117/Camp/ADGP (TRG)/2018 Dtd:01.09.2018 addressed to State Police Chief, Kerala

After interaction with the Police Officers who were engaged in rescue and relief operations during the recent flood and allied disasters, the following points are brought forth for kind attention and necessary action.

- Many officers were seen engaged in rescue and relief operations in their Executive Uniforms. This restricted their movements and posed difficulties in smooth execution of their tasks. Hence, separate uniforms with Kerala Police insignia engraved may be designed for such rescue and relief operations. Full sleeve shirts and gum boots may be part of cleaning operations whereas sleeveless body fit dress may be suitable for rescue operations in water.
- 2. Forces from Odisha and other States were seen engaged in rescue operations in a group of five in rubber dinghies. Similarly, Kerala Police should also be provided with dinghies and must be trained to operate in fives. Marine Enforcement of Fisheries Science Department was formed at a time when there was no Coastal Police. At present, Marine Enforcement Wing seems to be inactive and fully redundant. Hence, the same may be merged with the Coastal Police so that deployment of Kerala Police personnel on deputation to that wing may be avoided. This would provide additional manpower and logistics to the Coastal Police further enhancing their functionalities.
- 3. The entire Police personnel under the Coastal Police shall be given adequate training in water rescue operations so that they can operate in a squad/team/group of five/seven. Each squad may be given numbers and about 500 such groups may be formed and kept ready for deployment at districts during times of emergencies. Squads of two or buddy system may also be developed for deployment at districts during emergencies.
- 4. Police Stations like Ramankary, Pulincunnu in Kuttanad may be provided with permanent Police aid posts operating in 'House boats'. This would facilitate transportation of drinking water to flood victims held up at calamity-stricken areas. These aid posts operating in House boats could also operate as safe houses for police personnel as well as for storing important files and the like in the event of Police Stations becoming submerged in the flood.
- 5. Each Panchayath should have a Police Station and a Janamaithri Beat officer should be assigned to each ward in a Panchayath. Accordingly, the strength of the Police Stations should be revised and enhanced urgently. A separate protocol/SOP for different disasters detailing evacuation procedures; identifying safe houses (courtyard of churches, schools etc.); establishing communication and transportation; rescue and relief works; medical relief etc. taking into account the geographical as well as other factors of each area has to be developed. Police personnel, Fire and Rescue personnel, Excise, Jail and Motor Vehicle Depart-
ment, members of LSGD, ward members and public must be trained and made aware of this protocol, a copy of which is to be kept at all the Government departments.

Early action is solicited on the above matters.

Gist of letter No.117/Camp/ADGP (TRG)/2018 Dtd: 07.09.2018 addressed to State Police Chief, Kerala

Visits were made to the following areas and camps in the areas and interacted with flood affected people.

Pulinkunnu (Kuttanad), Alappuzha, Aluva, North Paravoor, Thrissur Kurancheri, Puthukad, Parappukkara, Koratti, Vettukavu, Chalakkudi, Mala, Annammanada.

Also meeting of Janamaithri CROs, SHOs and officers were held in Ernakulam City, Ernakulam Rural and Thrissur Rural Districts. The following points are brought to your kind notice for favour of information and further necessary action.

1. The officers and men in Kochi city reiterated that the abundant precautions and announcements they had done with the help of Janamaithri Samithi members and Residents Associations, helped them to tackle situation very effectively.

The officers and men requested for urgent supply of uniforms suited for wear during disasters.

We may request for centralized supply of these uniforms (at least one time) and then an increase in uniform allowance.

 The officers also requested for boats, rubber dinghies, life buoys and life jackets. Funds may be allotted for Disaster Management Training and Mock Drill to all the Districts once TOT at KEPA is over. Janamaithri samathi members and residents association representatives may be included in the mock drill.

The officers in Ernakulam Rural District highlighted again the need for convenient uniform. 339 officers and many of the DPO staff are affected by flood and many of them are in need of repair of houses, purchase of household articles and psychological care for themselves and family members.

Counseling facilities and financial help need to be extended to the officers.

The officers requested for supply of hand held sets and improvement of communication networks.

It is suggested that we may procure mobile repeater stations (vehicle mounted) and high band sets for districts/ranges so that in emergencies control rooms can be easily setup.

It is also requested that instructions may be given to all Inspectors to enter the details of 'Operation Jalaraksha' in part IV of crime records.

3. Officers of Thrissur Rural District also have done a tremendous job. They reported some serious omissions in relief operation; for example it was noticed that in Arattupuzha the bund has broken leading to flood. The river shutters of Irrigation Department and the PWD roads are under repair even now.

Officers highlighted need for supply of ASKA lights, high quality torches, more wireless sets and repeater stations etc.

Many of the officer's families are also in need of help as they, too, are flood affected. For all the Police Stations in low lying areas land may be procured in safer areas. For example, rented building of Aloor police station.

4. General: Rescue and cleaning logistics such as gum boots, torches, motors etc., supplied to flood affected Districts during Operation Jalaraksha by various agencies, may be taken to stock and evenly redistributed for effective use in future occasions.

General matters

Many flood affected areas are extremely dirty with filth all around the houses, water bodies and roads. Waste management awareness campaigns and quick segregation and collection of waste are needed.

- 1. Some areas still do not have food available as shops are closed (Aluva, Ranni etc)
- 2. Drinking water supply and cleaning of wells are slow in many areas.
- 3. At Mala, two chicken farms were still burning carcasses of around 10000 chickens with foul smell all around.
- 4. In many house premises, burning of waste including plastic and rubber was seen.
- 5. Some of the children in relief camps were not going to schools.
- 6. Some of those who have left camps are staying in temporary sheds with just a sheet over the unfit or dilapidated houses. Physical danger and psychological distress is tremendous. Two ladies in such houses told me that they feel like committing suicide. Of course SHOs and CROs will take care of these ladies whom we spotted. (One need a Sewing machine to re-stitch her life). But many such cases may be there. This points towards the need for urgent institutional interventions.

For housing, cleaning, water management, health care and damage assessment Committee with stake holders of all concerned Departments, Janamaithri Beat officers and Ward members may be formed at Ward level without further delay.



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Police Subculture and Its Influence on Arrest discretion Behaviour; an Empirical Study in the Context of Indian Police

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ABSTRACT:

The century old arrest law in India was amended in 2009 with a view to reduce the number of avoidable arrests. But the analysis of the official figures on arrest shows that the amended law has not made any dent in the field of law enforcements. The current research questionarises out of this observation; if the statute, departmental guidelines, court rulings, and police manual rules etc. have little influence on the arrest decision of the police, then what it is that considerably impacts such behavior? A review of literature shows that organisational, subcultural, environmental, individual and situational determinants are at the forefront of arrest discretion behaviour. The study has empirically tested the impact of subculture on arrest discretion behaviour of police in India and its relative significance compared with organisational determinants. The study establishes that subcultural determinants influence the arrest discretion twice as much as organisational determinants, this is contrary to the popular perception that it is the organisation through statutes, rules, regulations and compliance to court directives influences the arrest decision. The findings to an extent explain the existing gap between legislative intents to reduce the number of avoidable arrest and its realisation on the field.

KEYWORDS: police subculture, arrest discretion, extralegal, determinant

"Arrest and detention in police lock-up of a person can cause incalculable harm to the reputation and self-esteem of a person. No arrest can be made in a routine

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manner on a mere allegation of commission of an offence made against a person. It would be prudent for a police officer in the interest of protection of the constitutional rights of a citizen and perhaps in his own interest that no arrest should be made without a reasonable satisfaction reached after some investigation as to the genuineness and bona fides of a complaint and a reasonable belief both as to the person's complicity and even so as to the need to effect arrest. Denying a person of his liberty is a serious matter." – Supreme Court of India¹

Of the many duties performed by police, the arrest of suspect or accused of an offence remains core responsibility. The "legitimacy of coercive powers of detention, arrest and search comes about by virtue of a sovereign government that is bound by social contract with its citizens". As agents or representatives of the government, police are expected to uphold the obligations of social contract (Young, 2011). Because, it is argued that the "authority of police is derived from the people through the social contract. The power is held in public trust" (Moll, 2006). The police authority is a creation of such social contract to preserve life, liberty and the pursuit of happiness of the majority in society by keeping the criminal and deviant characters at bay. Arrest is one such legitimate authority of police which is the subject matter of intense debate and controversy since the creation of modern police force in the mid-nineteenth century. Law makers and courts across the globe have been working over a century now with new laws and rulings on how to regulate this power and put restraint on the arrest decision of police with more accountability.

1. Police Subculture

The informal organisational culture refers to the unwritten culture comprised of individual values and tradition that are communicated informally from officer to officer (Walker& Katz, 2005). This may be referred to as police subculture. Researchers and practitioners have devoted a considerable amount of time to understand the police subculture. It is understandable, given that 'culture' is noted as an obstacle to police accountability, a reason why police reforms fail, a cause of police abuse of authority, a mechanism for officers to cope with the hostile and uncertain work environments, and an explanation for discretionary behaviour (Ingram et al., 2013).

Subculture is a culture within a broader culture that may deviate in some aspects from the broader culture and which influences daily decisions (Herbert, 1998). Anthony (2018) argues that the culture of the police department equates to organizational culture. The culture of police officers in the street is a subculture. A police department has many of the components of organizational culture found in other organizations and industries, but what differentiates police culture from other organizational cultures is the constant potential for life-and-death encounters

¹Joginder Kumar v. State of UP, 1994 AIR 1349

combined with the unique stresses and strains that originate in the policing environment (White & Robinson, 2014). An individual's organizational identity is related to organizational culture (Alvesson & Sveningsson, 2015), indicating that police culture has an impact on how an officer identifies and behaves.

Cox (1996) contends that the police subculture tells officers "how to go about their tasks, how hard to work, what kinds of relationships to have with their fellow officers and other categories of people with whom they interact, and how they should feel about police administrators, judges, the law, and the requirements and restrictions they impose." For example, since police officers are exposed to physical risk during their day to day functioning, they conceptualise the world as a "potentially toxic and lethal work environment". This conceptualisation often leads to arbitrary behaviour (Young, 2011). Some of the myths like, "police represent the thin line between chaos and orders" ("thin blue line"), or "public potential hostile and untrustworthy" ("us and them") or deeply internalised by members across police organisations. Several scholars (McConville and Shepherd, 1992, Reiner, 1992) and Commission Reports (Wood, 1997, Mollen, 1994) confirm that "secrecy becomes protective armour shielding the force as a whole from public knowledge of infraction." "Code of silence" is something that applies to the rank and file. These discrete set of values are woven together to form a perceptual net that guides individual decisions (Brown, 1988).

The police often have to work in a potentially hostile environment for long hours within the constraints on resources and with an objective to maintain order in the society. Researchers have established that the members of the police organisation are guided by their own set of beliefs, attitudes and behaviour, what can be termed as police subculture. According to the seminal work of William Westley (1970), the police subculture is a crucial concept in the explanation of police behaviour and attitudes. The subculture, in his view, characterises public as hostile, not to be trusted, and potentially violent; this outlook requires secrecy, mutual support, and unity on the part of the police. Manning (1977) suggested that the inherent uncertainty of the police work, combined with the need for information control, leads to police team work, which in turn generates collective ties and mutual dependency. Police officers are influenced by the formal organisational structures and expressed organisational values and also by informal values, beliefs, norms, rituals, and expectations of the other police officers that are passed through the organisational culture and from one generation of police officers to another (Scaramella, Cox & McCamey 2011). Its influence begins early in the new officer's career when he is told by more experienced officers that training given in the police academies is irrelevant to "real" police work. (Bayley & Bittner, 1989). Sparrow, Moore and Kennedy (1992) argued that the police subculture creates a set of truth, according to which the officers are expected to live. It may be noted that there is some basis for each of these subcultural truths and each alienates police from the citizens.

- It is impossible to win the war on crimes without bending the rules.
- Public are potentially hostile and untrustworthy.
- Citizens are unsupportive and make unreasonable demands.
- The police are the only real crime fighters.
- Loyalty to colleagues counts more than anything else.
- No one understands the nature of police work but fellow officers.

Researchers have gone into details of these subcultural truths and come out with interesting findings and phenomena. The first of these perceived truths is what sociologist Carl B Klockers (1980) terms as "Dirty Harry dilemma" which rationalises vigilante justice. Klockers got it from the 1971 Warner Brothers film that dramatised a fundamental problem for police. A morally good end can employ whatever means necessary to accomplish the objective. The relevance and influence of this dilemma in every day police operations including in arrests is significant. Police officers generally perceive the criminal justice system is too liberal or ineffectual to deal with hardened criminals.

The dangers associated with policing often prompt officers to distance themselves from the chief source of danger –the citizens. Thus, the police officers, who are socially isolated from public, and rely on each other for protection from a hostile and dangerous work setting, tend to develop an "*us versus them*" attitude towards public and a strong sense loyalty towards fellow officers (Terril, Paolin, & Manning, 2003).

Yet another distinct subculture that perpetuates in the organisation is the feeling and belief that police are the real crime fighters. The thin line between order and chaos is held by them. Once police withdraw from the scene, disorder will descend and chaos will prevail. In the 1950s Bill Parker, the Chief of LAPD, coined the term "thin blue line" to reinforce the role of LAPD in fighting crime and maintaining order in Los Angeles. As Parker explained the thin blue line, representing the LAPD, is the barrier between law and order and social and civil anarchy (Lasley, 2012). The sentiments are echoed by the police organisations in India during a stakeholders' meeting with the Law Commission of India for its 177th Report on "Law relating to arrest²". In response to the consultation paper the state of Odisha justified the preamendment powers of arrest by police in cognisable offences by advocating that "the aggrieved public have come to see arrests of the culprits by the police as the first step in their yearning for justice. Any curtailment of this power will result in loss of public faith in the criminal justice system". It was further argued that "Indian society is generally perceived to be meek and relies considerably upon the armed police to

² The 177th Report on Law Relating to Arrest was taken up by the Law Commission of India suo motu with a view to clearly delineate and regulate the power of arrest without warrant vested in the police by Sec 41 and other sections of Criminal Procedure Code. The Commission recommended sweeping changes in the arrest laws in its Report in the year 2001 which were later inserted in the Criminal Procedure Code by amendments in the year 2009.

keep order and hence police should not be weakened." Haryana, another Indian state, was of the view that "Indian public do not expect the police to release the offender immediately after arrest. They would accuse the police of collusion in most such cases." The state police expressed grave concern on the proposed amendment stating that "the proposal to limit the power to arrest an accused in bailable offences, if implemented, would cause tremendous damage to maintenance of public order in the society." These strong sentiments of police organisations in India against liberal arrest laws betray the deep-seated ethos of this subculture across the police organisations. However, the term in the Indian context the term may be re-phrased as 'thin khaki line", with regard to the shade of the uniforms donned by the Indian police.

"Code of silence" is a strong subcultural ethos in policing to denote the informal rule of secrecy that exists among the police officers not to report on a colleague's errors, misconduct or brutality. Secrecy is a set of working tenets that loosely couple the police to accountability, that allow them to do their work and protect each other in the face of oversight interference (Caldero &Crank, 2004). This ethos compliments the "us versus them" mind-set and "Dirty Harry" dilemma. Because police perceive the public as non-cooperative, unappreciative and are critical of their work, and because the "rules are to be bent" for espousing a greater social cause, the loyalty to a fellow colleague acts as a premium against the professional hazards one encounters in career advancement. The perceived feeling of protection from colleagues against the abuse of power, particularly against illegal arrests or excesses during arrest, gives a sense of immunity to the officer and influences his discretionary powers.

1.1 Subculture as a determinant of arrest discretion

One of the most cited definitions of discretion is that offered by Kenneth Culp Davis (1969). He states that a "public officer has discretion whenever the effective limit on his power leave him free to make a choice among possible courses of action or inaction". This, of course, is a very broad definition of discretion which does not distinguish between acceptable and unacceptable bases for discretion. Accordingly, Davis went on to point out that the discretion allowed to officials is typically structured or "fettered" by policies or guidelines designed to ensure the acceptable exercises of discretion. According to Davis, discretion is not limited to what is authorised or what is legal but includes all that is within the effective limits of officer's power. This phraseology is necessary because a good deal of discretion is illegal or has questionable legality. Another facet of the definition is that a choice to do nothing; perhaps inaction decisions are ten or twenty times as frequent as action decisions (Palmiotto, Unitthan, ibid). Discretion is not limited to substantive choices

but extends to procedures, methods, forms, timing, and many other subsidiary factors.

The path breaking research of American Bar Foundation in the 50's and 60's brought about a paradigm shift in understanding the discretion in criminal justice system³. The result shows that "the idea that police, for example, made arrest decisions simply on the basis of whether or not a law has been violated – as a generation of police leaders led the public to believe – was simply an inaccurate portrayal of how police worked. The police work is complex, that police use enormous amount of discretion, that discretion is at the core of police function" (Kelling. 1999). Davis (1969), one of the prominent legal scholars on discretion, observed that "the police are among the most important policy makers of our entire society. And they are far more discretionary determinations in individual cases than any other class of administrators; I know of no close second". Having accepted that discretion is inescapable and unavoidable part of policing, the law makers, courts and the police organisations have been grappling with the issues of regulating and taming discretion so that decisions are principled rather than arbitrary and they respect human and civil rights (Bronnit & Stenning, 2011).

A literature review establishes that factors like organisational, situational, subcultural, environmental and individual determinants are at the forefront of influencing the arrest decision on behalf of the law enforcement (Gaines & Kappeler, 2003, Groeneveld, 2005, Hidayet, 2011). The organisation through its policy, process, value and training creates a structure that influences the arrest decision (Groeneveld, 2005). Subculture is a culture within a broader culture that may deviate in some aspects from the broader culture and influences daily decisions (Herbert, 1998). Anthony (2018) argues that the culture of the police department equates to organizational culture. The culture of police officers in the street is a subculture. Subcultural ethos is intangible and many of the subcultural ethos negatively influence the decision. In a democratic set up the police functions in an environment where the media, public opinion, public reaction and political culture create a complex maze within which the police take decisions. Each of these components either independently or in combination influence decision making processes of police. The literature review suggests that individual characteristics of officers on one hand and officers' value, belief and attitudes on the other are seen as correlates of police decision (Hidayet, 2011). Finally, the study establishes that situational determinants have considerable influence on arrest decision (Black, 1971, Hidayet, 2011). Some of the situational variables are; seriousness of crime, prior criminal

³ In 1953, the American Supreme Court Justice, Robert H. Jackson, believing criminal justice in a state of crisis, called for major national study of the criminal justice agencies by the American Bar Association (ABA). The findings of the decade long research, adopting methodology of field observation and "law in action", were starling that brought about a paradigm shift in the understanding of discretion in criminal justice system.

record, demeanour of the offender, individual officer characteristics etc. (Gaines & Kappeler, 2003; Walker & Katz, 2005).

Out of the five determinants – organisational, situational, subcultural, environmental and individual – the first one comprises legal variables like statute, court directives, departmental guidelines, manual rules while the situational determinants are partly guided by legal factors like seriousness of the offence, and offender's criminal record etc. and partly by some extralegal factors like demeanour of the offender and individual officers characteristics. Rest of the determinants are extralegal⁴, complex and intangible in nature while considerably influencing the arrest decision. While the empirical research leaves little doubt that legal factors significantly influence arrest outcomes, arrest decision is not solely influenced by law, and "policing is for the most part extralegal, for while officers work within the constraints of law, they seldom invoke law in performing police work" (Worden, 1989).

2. Statement of Problem

The century old arrest law of India was amended in the year 2009 on the basis of recommendations of the Law Commission of India in its 177th Report⁵. The objective was to reduce the number of avoidable arrests. The amended Section 41 Criminal Procedure Code⁶ introduced a new provision of "service of notice" instead of formal arrest of an accused person for the offences punishable with imprisonment for less than or up to seven years. Analysis of substantive laws in India shows that the offences which prescribe punishment up to or less than seven years constitute two-thirds of the total penal offences. Following the new amendment, the arrest figures in India should have been reduced by two-third as similar proportion of offences are punishable up to or less than seven years of imprisonment in the substantive laws of India. But a study of arrest figures for the pre- and post-amendment periods shows that there has been a very insignificant reduction in the arrest figures (1.18 arrest per offence in the post-amendment period as against 1.19 in the pre-amendment period⁷). The inquiry further delves into the question if the

⁴ Extralegal is not synonymous with illegal. Extra-legal factors are those factors in decision making which are not regulated or sanctioned by law, yet have influence on shaping the final outcome of the decision.

⁵ The procedures for arrest in the Criminal Procedure Code 1898 retained its language and form till 2009 when on the basis of recommendations of the 177th Report of the law Commission of India amendments were brought in. The Law Commission recommended the sweeping changes in the arrest law citing the legal principles of "reasonableness", 'necessity" and "restraints".

⁶ Criminal Procedure Code is the main legislation on procedure for administration of substantive criminal laws of India. Enacted in 1973, it provides for procedures of arrest, police investigation and court proceedings

⁷ Figures from Crime in India, NCRB, Government of India from 2006 to 2014

statute, departmental guidelines, court rulings, police manual rules etc. have little influence on the arrest decision of the police, then what considerably impact such behavior?

If in spite of the amended provision of the procedural law on arrest and with catena of court directives and departmental guidelines, the arrest figures in India do not show any appreciable decline, defeating the legislative intent. The inescapable conclusion that follows is the dominating role played by the complex set of extralegal factors in arrest decision. Subcultural factors are extralegal in nature, not regulated or sanctioned by law. In the absence of literature on police discretion and study on the subject in India, this research intends to explore these extralegal factors, particularly embedded within the conceptual space of police subculture, and its influence on arrest discretion with empirical investigation on Indian context on the basis of literature available internationally. The relative importance of the subcultural determinants over organisational determinants on arrest discretion needs to be empirically tested to arrive at any conclusion.

3. Objective of the study

With this background, the objectives of the study have been set; first, to find out if the subcultural determinant of arrest discretion collected on the basis of literature review from the West has any validation in the Indian context; second, what is the relative importance of the subcultural determinant in influencing the arrest discretion behaviour of police compared with the organisational determinants which are legalistic and structured to ensure that the discretion is exercised within the boundaries of rules and statutes; third, the study aims to be interpretive, which means the researcher intends to provide explanations for the results obtained in this study through analysis of background study of Indian policing, laws and policies in India and by considering the interplay of variables in this study; fourth, on the basis of study findings some recommendations can be generated and may be interest to the policy makers, police leaders, practitioners and police researchers in India; fifth, the study has potential to contribute to the literature on subcultural influence on arrest decision behaviour being the first of its kind in the Indian context.

4. Research Question

Having set the research objective against the background of the research problem, the following research questions have been developed:

RQ 1. Is the subcultural determinant of arrest discretion behaviour found in the Western literature significant for police in India?

- **RQ 2.** Does the extralegal determinant like subculture impact the arrest discretion behaviour of police in India?
- **RQ3.** What is the relative importance of subcultural determinant as compared with the organisational determinant?

Research Method and Design

The major approach in this study is quantitative data analysis. The variables under each determinant have been operationalised with appropriate response statements and respondents have been asked to express their degree of agreement or disagreement with each item on a classical Likert scales with five choices. A total of 222 police respondents from Odisha police and 138 officers from Indian Police Service from different states of India have participated in the study as random samples. Multiple regression analysis, combination of simple frequency table and cross tabulation have been employed for data analysis by adopting SPSS software⁸.

5. Study Variable

From the preceding discussions sixteenvariables representing the dimensions under organisational (four each for policy, process and values), and subcultural determinants have been selected from literature review for their operationalisation in the context of India police. Table 1 shows the study variables under three dimensions of organisational determinant and under subcultural determinant.

Table 1 Study Variables

A. Organisational Determinants:

1. Policy Dimensions

- a. Specific Statutory Guidelines
- b. Court Pronouncement e.g., Arnesh Kumar guidelines
- c. Extensiveness of arrest policy e.g., Crime Branch Circular
- d. Internal Review

2. Process dimensions

- a. Supervisory monitoring
- b. Weightage to supervisory instructions over personal judgement

⁸ Statistical Package for Social Science is a software package used for interactive or batched statistical analysis. In the present study SPSS 16.0 has been used for correlation, multiple regression analysis.

- c. Discovery of procedural violations
- d. Departmental /legal actions

3. Value Dimensions

- a. Independence
- b. Discretionary Choices
- c. Training
- d. Community Policing

B. Subcultural Determinants:

- a. "Dirty Harry Dilemma" (criminal justice system is ineffectual)
- b. "Us versus them" (public potentially hostile and untrustworthy)
- c. "Thin Blue Line" (thin line between order and chaos)
- d. "Code of Silence" (to maintain solidarity & protect each other)

Each indicator needs to be different from other indicators in that each measures a different aspect of the specified dimension. This is consistent with the statistical notion that indicators should be additive, such that the accumulation of the indicators individually captures different aspects of the dimensions and collectively they represent the conceptual space defined by the dimension (Groeneveld, 2005).

The sixteen indicators must be translated into research terms to effectively measure the concept. This presents a measurement challenge. Since the determinants and indicators developed in this study are constructed to be additive, the appropriate scaling technique is that of Summated Ratings and scale is "Likert scales". It assumes that each scale item is a statement, either positive or negative, related to the concept of interest, that the statements are additive in nature and that the respondents will be asked to express their degree of agreement or disagreement with each item. The process of scoring the scale is achieved by assigning numeric value to the response format. The classical Likert scales with five choices, stating from "Strongly Agree" to "Strongly Disagree" have been chosen for this study. The response format is worded such that strong agreement or disagreement with the item indicates higher degree of influence with respect to the indicator. Accordingly, a value of 5 has been assigned to "strongly agree" receives a value of 1.

Each variable under a major a determinant or concept needs to be qualified with a statement which should be meaningful to the "world of experience" and collectively they must represent the concept. To take the example of influence of sub-culture on arrest discretion behaviour, the conceptual space of "sub-culture" is intended to be represented collectively by (i)"Dirty Harry dilemma" (criminal justice system is ineffectual), (ii)"us versus them" (public potentially hostile and untrustworthy), (iii)"thin blue/khaki line" (thin line between order and chaos), (iv)"code of silence" (to maintain solidarity and protect each other). Each necessarily needs to be

qualified with a statement which the respondent must be able to relate to the "world of experience" and when responded must indicate the degree of his/her agreement or disagreement. The following is an example of Likert scales used for this study to operationalise "dirty Harry dilemma" and "specific statutory guidelines"

Table 2: Response Format Example

"Dirty Harry dilemma"

"Arrest and pre-trial custody during investigation is the only punishment meted out to anti-social and rowdy elements as they are most likely to get acquitted"

"Specific statutory guidelines"

"The amended provisions of Sec 41 Cr PC (arrest in cognizable offences) are very specific and provide detailed guidelines on arrest in cognizable cases"

Strongly	Agree	Cannot	Disagree	Strongly
Agree		say		Disagree
5	4	3	2	1

6. Sampling Technique

The study has been undertaken in the context of Indian police. Despite 29 state police and 7 union territory police organisations and diversity in police forces, there is good deal of commonality among the organisations. This is due to four main reasons:

- 1. The structure and working of the State Police Forces are governed by the Police Act of 1861, which is applicable in most parts of the country, or by the State Police Acts modelled mostly on the 1861 legislation.
- 2. Major criminal laws, like the Indian Penal Code, the Code of Criminal Procedure, the Indian Evidence Act etc. are uniformly applicable to almost all parts of the country.
- 3. The Indian Police Service (IPS) is an All India Service, which is recruited, trained and managed by the Union Government and which provides the bulk of senior officers to the State Police Forces.
- 4. "The quasi-federal character of the Indian polity, with specific provisions in the Constitution, allows a coordinating and counselling role for the Centre in police matters and even authorizes it to set up certain central police organisations." (CHRI, 2002)
- 5. The rulings of the Supreme Court of India on police matters are applicable and binding to all state and union territory police organisations.

In this study, the state of Odisha is taken as a universe.Besides, random selection of senior officers from India Police Service from across different states and union territory polices of the country on senior training course at SVP National Police

Academy, Hyderabad have been taken as respondents to make the study more broad-based. Therefore, inductively, the research findings are expected to mirror pan Indian characteristics of police discretion behaviour in making arrests in cognisable offences. A total of 360 respondents, both from Odisha state police (222) and senior members of Indian Police Service from other state and union territory polices (138) have participated in this study.

7. Data Analysis Technique

One of the analytical goals of the study is to characterise and examine how far and to what extent the organisational and sub-cultural determinants influence arrest discretion behaviour. In situation like this, where the research focuses on examining the impact of several independent variables (all the dimensions and determinants) on a single depend variable (arrest discretion behaviour of police), multiple regression is the appropriate analysis technique. This approach is used as a means of quantifying both the amount of variance explained by relative importance of each independent variable and by all the independent variable acting together on the dependent variable.

Multiple regression is a technique based upon the general linear model of statistics. This statistical model is designed to examine the relationship among a number of independent variables and one dependent variable. It answers two questions about any statistical model: what is the relative importance of the independent variables in causing change in the dependent variable, and how much variance in the dependent variable is explained by the independent variables acting together. The relative importance of independent variables is assessed using the standardised regression coefficient, also known as beta (β) coefficient. It is interpreted as the amount of change in the dependent variable associated with a standardised one-unit change in the focal independent variable, controlling for the effects of all other independent variables. Beta coefficients vary between a lower anchor value of -1.0 and upper limit of +1.0. The higher the coefficient value, the greater the amount of unique change caused in the dependent variable by the focal predictor (independent variable). Consequently, greater is the relative importance of that independent variable (Groeneveld, 2005).

Two tests are essential for meaningful interpretation of the beta coefficients. Beta coefficients are tested for statistical significance. A respondent's 't' statistics is calculated to assess whether the tabulated beta coefficient is statistically significant. For the meaningful regression analysis, the predictors should be statistically significant. The other assumption is that the predictor (independent) variables are not intercorrelated. The assumption is considered critical in regression analysis because of the presence of such intercorrelations - referred to as multicollinearity - causes significant difficulty in interpreting coefficients. Multicollinearity means one

may not be able to free the influence of one independent variable from the other with which it is correlated.

The second goal is to find out from among the dimensions (predictor or independent variable) which has significant contribution towards influencing the determinants (conceptual space) - organisational and subcultural- and which among two has more contribution towards influencing arrest discretion behaviour of police. This will be achieved by multiple regression technique.

8. Key Findings

The key findings have been discussed on the basis of values of beta coefficients of individual variables operationalised to define the conceptual space of a dimension and taking the combined value of the variables to analyse the relative importance of a dimension or determinant. Besides, frequency distributions of responses have been analysed for the significance of the variables.

8.1 Organisational Determinant

The research literature indicates that the way the organisation creates a structure for arrest discretion flows from three principal sources; official policy, process, and values. These dimensions capture the channel through which the officers can influence or constraint the arrest discretion behaviour of the officers. One of the empirical tasks is to find out which among these three has maximum impact on arrest discretion in presence of the other two. While the data analysis shows that all three are highly significant to the organisational determinant, the process dimension with highest beta coefficient of 0.569 among the three dimensions is the most sensitive predictor with maximum effect on the organisational determinants, followed by the policy dimension (0.513) and value dimension (0.444). The findings give empirical support to the hypothesis that the way the organisation creates a structure for arrest discretion flows from three principal sources; official policy, process, and values. These dimensions capture the channel through which the departmental supervisory officers can influence or constraint the arrest discretion behaviour of the officers.

8.2 Subcultural Determinant

Four dimensions of informal organisational or subcultural determinants have been carefully chosen for the study— "Dirty Harry dilemma", "us versus them", "thin blue (khaki) line", and "code of silence". In course of the data analysis of the frequency tables under subcultural determinants it has been established that majority of the respondents either agreed or strongly agreed to the all four strong subcultural traits within the police organisation with varying degrees of endorsement ranging

from 55 to 68 percent. It is to be found out whether the dimensions capture the essence of subcultural ethos and how do they behave with one another to impact the core subcultural determinant by linear regression analysis. Table 3 shows the mean, standard deviation, t-test results, correlation coefficients and beta coefficient values of the four variables coded, X_1, X_2, X_3 and X_4 respectively.

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Table 3: Regression Analysis of Subcultural Determinants

NB: The values in the parenthesis represent the standard deviation. t-test at 5% level of significance = 1,960 and for 1% level of significance = 2.576 (degree of freedom = 359)

The t-statistics for the factors considered for the study are highly significant both at 5% and 1% level of significance with values ranging from 49.465 (for X_1) to 72.091 (for X_2). The correlation coefficient ('r') value between any two factors varies from 0.13 ($X_2 \& X_3$) to 0.25 ($X_1 \& X_4$), which is of low value. With both

Factors (Independ	Code	Mean	t-test	Correlation coefficient (r)				βcoeffi cient
ent				BX ₁	BX ₂	BX3	BX ₄	
Dirty Harry Dilemma	X 1	3.44 (±1.32)	49.465	1.00				0.447
Us versus them	X ₂	3.61 (±0.95)	72.091	0.21	1.00			0.322
Thin Blue (khaki) line	X ₃	3.33 (±1.15)	55.158	0.14	0.13	1.00		0.388
Code of silence	X ₄	3.25 (±1.27)	48.619	0.25	0.16	0.24	1.00	0.430

presuppositions – statistical significance & absence of multicollinearity – being statistically established, the beta coefficients can be meaningfully interpreted. The factor, "Dirty Harry dilemma" with highest beta coefficient of 0.447 among the four

independent variables is the most sensitive predictor within the subculture determinants with highest impact on the dependent variable i.e., subculture, followed by the factor "code of silence" (0.430). Rest two factors are also positively correlated with subculture determinants carrying values of 0.388 (thin blue/khaki line) and 0.322 (us versus them).

The empirical tests validate the research presupposition that the factors taken to represent the subcultural determinants are highly relevant, relatively independent of each other's sphere of influence and yet collectively define the conceptual space.

8.3 Relative significance Organisational, and Subcultural Determinants over Arrest Discretion

One of the key assumptions of this study is that determinants, such as, organisation through its policy, process and value dimensions and subcultural ethos, operating environment within which the police function, situational and individual factors, either individually or in combination, influence the arrest discretion behaviour of the police. Out of the five such determinants, the first twodeterminants – organisational and subcultural – have been operationalised for statistical analysis with several anchor variables. One of the tasks is to find out the relative importance of the determinant from among the two in influencing the arrest discretion behaviour (dependent variable) and to find out which between the two determinants (independent or predictor variables) has more influence on the arrest discretion behaviour behaviour while controlling for all of the other determinant. The subcultural determinant with highest beta coefficient of 0.593 between the two determinants is the more sensitive with greater effects on arrest discretion behaviour, and organisational determinants with beta value of 0.295 is a distance second (please refer Table 4).

What could the intuitive support for subcultural determinants impacting the arrest discretion behaviour more than the organisational determinants, which are well defined with rules, regulations, statutes and, departmental sanctions etc.?The answer is not far to seek. The organisational determinants are constrained by statutes, rules, departmental regulations, guidelines, and court directives, which all can be categorised as legal determinants. They are more objective and hence less likely to be susceptible to individual vagaries. Whereas, subculture determinant is intangible in nature, susceptible to individual interpretation and most importantly extralegal in characteristics. Not surprisingly, subcultural determinant is empirically proved to impact the arrest discretion behaviour more than the organisational determinant. On the other words, officers react to the organisational determinants more objectively and to the subcultural determinants more subjectively.

9. Discussions on Research Questions

Having set the research objective against the background of the research problem, the following research questions have been developed:

- RQ 1. Is the subcultural determinant of arrest discretion behaviour found in the Western literature significant for police in India?
- RQ 2. Does the extra-legal determinant like subculture impact the arrest discretion behaviour of police in India?
- RQ 3. What is the relative importance of subcultural determinant compared with organisational determinant?

Two statistical methods have been employed for data analysis. First, frequency distributions of the responses which makes it possible for a detailed analysis of the structure of the population with respect to a given characteristics. On the basis of frequency of agreement to a response statement a general proposition can be drawn on how much the population agrees to the existence of response predictors that influence the arrest discretion behaviour. The response format is worded such that strong agreement or disagreement with the item indicates higher degree of influence with respect to the indicator. Second, multiple regression method has been employed to examine the relationship among a number of independent variable and one independent variable. It answers two questions about any statistical model: what is the relative importance of the independent variables in causing change in the dependent variable, and how much variance in the dependent variable is explained by the independent variables acting together. The relative importance of independent variables is assessed using the standardised regression coefficient, also known as beta (β) coefficient. Beta coefficients vary between a lower anchor value of -1.0 and upper limit of +1.0. The higher the coefficient value, the greater the amount of unique change caused in the dependent variable by the focal predictor (independent variable). Consequently, greater is the relative importance of that independent variable (Groeneveld, 2005).

To answer the question; if the determinants are significant for police in India, firstly, it must be shown that majority of the population endorses the response statements by "agreeing or "strongly agreeing" with them. On the basis of frequency of agreement to a general statement an inference can be drawn on how much the population agrees to the existence of response predictor that influence the arrest discretion. This requires simple interpretation of the frequency table. Secondly, from the regression analysis tables the study of beta coefficient values are likely to throw insight into the significance and relative importance of each

independent variable in influencing the arrest discretion behaviour (the dependent variable). Table 4 contains the average frequency distribution of agreement (both "agree and "strongly agree") and the beta coefficient values of the predictor variables for the determinants; organisation, and subculture. The significance of the two determinants have been shown in one Table for answering the RQ 3, which calls for relative values for comparative study.

Determinants	Dimensions	%Agree/ Strongly	βcoefficient
		agree	
	Policy	82.8	0.295
Organisational	Process	65.0	
	Values	78.0	
Subcultural	·	60.5	0.593

 Table 4: Frequency Distribution and Beta Coefficient of the

 Determinants

Majority of the population endorse the response statements designed to capture the determinants or dimensions with the frequency distribution varying from 60.5 to 82.8 percent for "agree/strongly agree" responses. This testifies empirically that the majority of the population agrees to the existence of the response predictors that influence the arrest discretion. The positive values of beta coefficients signify that both the determinants are positively correlated with arrest discretion. Subculture with higher value is the more sensitive dependent determinant among the two in influencing arrest discretion behaviour. The study thus validates that the determinants of arrest discretion found from the literature of the West are highly significant to police in India. This answers the RQ 1.

With beta coefficient value of 0.593 (say 0.6) the subculture determinants impact the arrestdiscretion to the extent of sixty percent and organisational determinant with beta coefficient of 0.295 (say 0.3) impacts the arrest discretion to the extent of thirty percent. In other words, subcultural determinant can influence the arrest discretion behaviour twice as much as the organisational determinants. This answers the RQ 2 and 3. Now, having empirically established the research questions, it is essential to examine their implications in arrest discretion behaviour.

The findings on the face of it appears to be counter intuitive. How could the organisational determinants with statutes, rules, court directives, guidelines, regulations, and disciplinary mechanism which are in place for the violation of departmental norms etc. influence the arrest discretion behaviour to the extent of half that of subcultural determinants? The answer lies in explaining the legal – extralegal conundrum. The factors comprising the organisational determinants are strictly legal ones and, interpreted objectively, thereby leaving little room for subjective

interpretation of a decision. Whereas, the conceptual space for subcultural determinants are captured by complex and intangible extralegal factors, not regulated or sanctioned by law. Subjectivity of an officer in addressing a situation is key here leaving little scope for objective assessment to arrive at a decision. It's the complex and intangible nature of the subcultural determinants that have the mischief potential to influence the discretion more than the organisational determinants, which are structured and fettered by policies and guidelines and therefore, designed to ensure acceptable bases for discretion.

The study implies that suitable mechanism should be put in place by the police leadership to identify the negative effects of the subculture, decide the changes needed and support the desired changes.

10. Recommendations

This study establishes empirically that subcultural determinants play a dominant role in arrest discretion behaviour of police in India, more than the legal factors manifested by the organisational determinants. An adherence to police subculture may foster negative and cynical attitude towards citizens and even the legal system (Cochran & Bromley, 2003). The 'us and them' and "Dirty Harry dilemma" are the manifestations of such subcultural ethos. Wood (1997) argues that the adherence to subculture will reinforce peer loyalty so that police misconduct is undetected because of the "code of silence". Anthony (2018) suggests that changing culture of a police organisation and of the officers requires training initiatives that will be accepted, supported and implemented by the officers. It is recommended that police leadership consider training programme on ethics and the practice of community policing to improve the department's operational image (Mohanty & Mohanty, 2014). This would help to overcome the negative aspects of police culture. The police leaders should first determine the desired culture they wish to instill, compare it with the existing culture to decide the changes needed. Consequently, they can promote, disaffection with the existing culture and support for the desired changes.

11. Contribution of the Study

The literature on police discretion is relatively unknown in India, not to speak of arrest discretion behaviour. This study is a maiden attempt to empirically investigate the determinants of arrest discretion behaviour of police as suggested in Western literature but in the context of police in India. Without any previous reference point, this study may be termed as exploratory in nature in that it provides an overall insight into how the field police officers and senior supervisory officers in India perceive the widely discussed determinants of arrest discretion. The study empirically establishes that the subcultural determinants influence the arrest discretion behaviour twice as much as the organisational determinants, contrary to the popular perception that it is the organisation through statutes, rules, regulations and compliance to court directives influence the arrest decision. The findings to an extent explain the existing gap between legislative intents to reduce the number of avoidable arrest and its realisation in the field of law enforcement.

The components of organisational determinants are legal factors whereas those of subcultural are extralegal ones. Extralegal factors are intangible and complex, not regulated or sanctioned by law, yet have influence on shaping the final outcome of the decision. The decision-making process within the discretionary boundary is a complex exercise of legal-extralegal conundrum. The colourful exercise of arrest power or abuse of arrest discretion is often clothed as a legitimate exercise because the boundary between legal and extralegal considerations is thin and not well defined. This study brings some amount of clarity into the arrest decision making process so that the police leaders can identify the factors contributing to the discretionary abuse and put proper accountability mechanism in place to prevent such abuse.

Reference

- Alvesson, M., & Sveningsson, S. (2015). Changing organizational culture: Cultural change work in progress. New York, NY: New York.
- Anthony Larry, D. (2018). Police culture and decision making, Walden university Scholar Works, http://scholarworks.waldenu.edu/dissertation accessed on 21.1.2019.
- Bayley, D.H., & Bittner, E. (1989). Learning the skills of policing. Law and Contemporary Problems, pp 35-59.
- Black, D. J. (1971). Social organization of arrest. Sanford Law Review, 23, 1087– 1111.
- Bronitt, Simon H and Stenning, Philip. (2011) Understanding Discretion in Modern Policing (2011). Criminal Law Journal, 35 6: 319-332. Accessed on 16.6.2016http://sites.thomsonreuters.com.au/journals/files/2011/12/CrimLJ_v3 5 pt06 Dec2011 offprint bronnit stenning1.pdf
- Brown, M. K. (1988). Working the street: Police discretion and the dilemmas of reform. Beverly Hills: Sage.
- Caldero, M.A. & Crank, J.P. (2004). Police Ethics: The Corruption to Noble Cause, Anderson Publications Inc.
- Cochran, J. K., & Bromley, M. L. (2003). The myth (?) of the police sub-culture. Policing: An International Journal of Police Strategies & Management, 26(1), 88117.
- Cox, Steven M. (1996). Police Practices, Perspectives and problems. Boston. Allyn & Bacon

- Davis, Kenneth Culp. (1969). Discretionary Justice A preliminary enquiry; Baton Rouge, LA: Louisiana State University Press.
- Gaines L.K. & Kappeler, V.E. (2003). Policing in America (4th Ed) Cincinnati, OH: Anderson Publishing.
- Groeneveld, R. F. (2005). Arrest discretion of police officers: The impact of varying organizational structures. New York, NY: LFB Scholarly.
- Herbert, S. (1998). Police subculture reconsidered. Criminology, 36(2), 343-370.
- Hidayet Tasdoven. (2011). Personal perception and Organizational Factors Influencing Police Discretion: The Case of Turkish Patrol Officers' responsiveness. Doctoral Dissertation (Open Access) University of Central Florida.
- Kelling, G.L. (1999). Broken Windows and Police Discretion, Research Report National Institute of Justice, Washington D.C.
- Ingram, J. R., Paoline, E. A., & Terrill, W. (2013). A multilevel framework for understanding police culture: the role of the workgroup. Criminology, 51(2), 365-397.
- Klockars, C.B. (1980). Annals of the American Academy of Political and Social Science, Vol. 452, The Police and Violence. (Nov., 1980), pp. 33-47. Accessed from internet on 21.5.2027

http://www.kyoolee.net/Dirty_Harry_Problem__the_-_Klockars.pdf

- Lasley, J. (2012). Los Angeles Police Department Meltdown: The fall of the professional reform model of policing. CRC Press, Fl, USA
- McConrville, M and Shepherd D. (1992). Watching Police, watching Communities London: Routledge.
- Moll, Monica M. (2006). Improving American Police Ethics Training: Focusing on Social Contract Theory and Constitutional Principles, "Forum on Public Policy", <u>www.forumonpublicpolicy.com/archievessum07/moll.pdf</u> (accessed on 16 January, 2016).
- Mohanty Satyajit, & Mohanty Rabindra K. (2014). Community Policing as a Public Policy: Challenges and Recommendations. Cambridge Scholars Publishing, UK.
- Mollen Commission. (1994). Report of the Commission to Investigate allegations of Police Corruption and anti-corruption procedures of Police department. City of New York, Mollen Commission.
- Palmiotto, Michael J, Unnithan, Prabha N. (2011). Policing & Society: A global approach, Delmar Cengage Learning, NY.
- Scaramella, G.L, Cox S M, McCamey W. P. (2011). Introduction to Policing. SAGE, USA.
- Sparrow Malcolm, Mark H. Moore & David M. Kennedy (1990) Beyond 911: A new era for Policing. New York Basic Books.

- Terrill, W., Paoline. E. A., & Manning, P. K. (2003). Police culture and coercion. Criminology, 41(4), 1003-35.
- Walker S, & Katz, C.M. (2005). The Police in America: An Introduction (5thed) New York, NY: Mc-Graw Hill Companies.

Westley, W. (1970). Violence and the police. Cambridge, MA: MIT Press.

- White, V., & Robinson, S. (2014). Leading change in policing: police culture and the psychological contract. The Police Journal, 87(4), 258-269.
- Wood, JRT. (1997). Final Report of the Royal Commission into the New South Wales Police Service: Vol 1: Corruption (Code of silence: and "us and them")
- Wood, JRT. (1997). Final Report of the Royal Commission into the New South Wales Police Service: Vol 1: Corruption (Code of silence: and "us and them")
- Worden, R. E. (1989). Situational and attitudinal explanations of police behavior: A theoretical reappraisal and empirical assessment. Law and Society Review, 23, 667–711.
- Young B. Bernice. (2011). Police Discretion in Contemporary America, M A Thesis Faculty of the School of Continuing Studies, Georgetown University, Washington D.C.
- https://repository.library.georgetown.edu/bitstream/handle/10822/553420/youngBer niceBrooks.pdf?s (accessed on 16 January, 2016).



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The Dilemmas of Democratic Policing & Police Reforms

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Why don't our efforts to professionalize the Police result in a satisfactory Police image? Perhaps, because the Police have focused exclusively on improving the establishment - the organization, tenure security, equipment etc. without addressing issues relating to the police function and conflicts/contradictions in Police work. It is necessary to examine the contradictions between the expectations of the people and Police's ability to deliver, to understand the reasons for this failure. Let us take a few examples:

Law requires the Police to enforce all criminal laws all the time. Police discretion to enforce a criminal law or not to enforce it is not envisaged in law. Yet, full enforcement of many laws will never be tolerated. Selective enforcement of mala prohibita laws relating to social vices or bad practices like child marriage, dowry etc. is well known but what about neglect of laws enacted for maintenance of public order? Say, for instance, 'The Religious Institutions (Prevention of Misuse) Act of 1988'?

Police are expected to prevent crime and arrest all criminals if crime happens. However, in reality, this ability is limited.

Police are expected to act in a coercive authoritarian manner in some situations but be supportive and friendly in most others.

Police are expected to be completely neutral but in the day-to-day operations demanded to be flexible to local politics.

Police are expected to be able to deal with any emergency but usually they neither have the resources nor the authority to deal with many such situations.

Police legitimacy flows from an expectation of effectiveness in adjudicating guilt and proposing punishment on the guilty. But the Criminal Justice System is so overcrowded, overburdened and disorganized, that this is mostly under achieved.

Most importantly, there is this basic conflict between fighting crime and constitutional due process which is inherent in a free democratic society. Police is expected to be

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ruthless with criminals but must be so in accordance with elaborate procedures that place severe limitations on that capacity – often to the bewilderment of a poorly informed citizenry.

Whatever be the reasons, whether we agree or not, for good or bad, these perceptions are entrenched and they endure.

In reality, therefore, much of Police functioning is characterized by these features:

Arrest, though envisaged as the first step in the criminal justice process, is used by the police to investigate, harass, punish, confine and thus achieve a whole range of objectives.

The volume of work handled by police far exceeds the volume of work handled by the other wings of the Criminal Justice System. Therefore, informal/illegal "gates" to control the flow of work have evolved in policing – burking being a prime example.

Unlike administrative or other civil services, in theory, policemen have little discretion. But in practice they exercise a great deal of discretion in handling the huge variety of situations that confront them, including when to or not to arrest or to prosecute!

While demanding close relationship between the citizenry and the police, the system is designed to destroy personal relationships between the police officers and citizens. All States have rules that require police officers to be not posted in their native places. They are also required to be transferred from their place of posting regularly to ensure that they do not develop local relationships. While there may be compelling arguments in favour of posting officers away from their native places, the point being made here is that the design of the existing system favours impersonal contact with the citizens. While on the other hand police officers are exhorted to be close to the citizens they serve.

In parallel, because of the need to have regular transfers; transfers and postings have also become a lucrative industry patronized by the politicians and happily indulged in by police leaders.

Given these circumstances, therefore, most Senior Police officers who are considered 'successful' are those who profess the principle but actually practice the realism.

Let us recall some instances in the recent past where the police leaders, while claiming adherence to constitutional values, exercised their authority more in consonance with the diktat of local politics. The Jat agitation in Haryana and the Kapu agitation in A.P. of 2016, Jalikattu agitation of Tamil Nadu in 2017, Bhima Koregaon agitation in Maharashtra in 2018- all had a feature in common. The pusillanimity of the state/local level political leadership that emanated from either indecision or cynical politics, translated directly into ineffective and incoherent policing outcomes. Contrast this with the decisive Police action against the Kudankulam agitation- where the will of the state government was decisive and forceful. It needs to be emphasised that one is not passing value judgement over the rightness or the wrongness of the police action/inaction. The point being made here is that the Police effectiveness is more closely tied with local political compulsions than legal or constitutional values.

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We therefore need to examine, in a philosophical sense, the root cause of this paradox. And for this, we need to examine the first principles of what it means to be true to our core constitutional values. The three institutions that constitute a stable political order are the State, rule of law and mechanisms of accountability. Of these, the State and the rule of law do not need much elaboration but accountability means different things to different people.

In its broadest sense, accountability means that the government is responsive to what Aristotle called the 'common good', rather than its own interest. Mere procedural accountability is what regular free elections are all about. However, substantive accountability would also mean the government responding to the broader interest of the society without being necessarily subject to procedural accountability (unconstrained rulers, however, may not remain responsive to the common good for too long!). The institutions of the State concentrate power to enable enforcement of law and order. The rule of law and mechanisms of accountability constrain this power. A mature liberal democracy has all the three – the State, the rule of law and procedural accountability in a kind of balance. A state without proper checks would tend towards dictatorship. One that is weak and checked by a number of subordinate political forces is ineffective. While we can be justifiably proud of having had a liberal democracy since independence, India is also labelled as a 'flailing state' precisely because of its combination of a robust economy, corrupt politics, huge social tensions, vast economic inequalities, barely functional municipal services, unplanned and unregulated expansion of cities crowded with immigrants from rural areas and all such micro failures of the State.

India today can be proud of its procedural accountability in its democratic setup. However, to validate its substantive accountability, our democracy needs to be examined with respect to the four questions that should be asked regarding its nature relating to its purpose– the aim of democracy and the reason it is valued; its processes – the mechanisms by which its purposes are fulfilled; its proximity to the ideal of democracy; and its particularity – the degree to which the other three questions are answered with regard to our society.

Democratic pluralists have de-emphasized mass participation while still requiring dispersal of political power. Hence, our system placed power in the hands of unelected elites – the judiciary and the bureaucracy while facilitating elected legislatures to set the democratic agenda. Some of the capstone achievements of democratic India are the ones that were realised through the unelected Supreme Court, Election Commission, Reserve Bank of India, the Armed forces....

This is also why there is this tension between the romanticized picture of local politics (as being closer to the grassroots) with an overambitious expectation of community involvement in policing and the requirement of a neutral, standardised, unbiased police setup. Why is this so?

It is so, because it is often erroneously assumed that principles of human behaviour can be applied across scales without any change. Immanuel Kant's categorical imperative requires that one should behave as if one's action can be generalized to the behaviour of everyone in all places, under all conditions. While sound in theory, it is difficult to practice. A country is not a large city and a city is not a large family. Since time immemorial, humans have had difficulty in scaling universalism. The ancient Greeks, who gave us democracy, treated all equally – but only their citizens. Not the slaves or the immigrants. In fact, the code of Theodosius deprived Roman citizens who married 'barbarians' of their legal rights. The Jews distinguished between 'thick blood' and 'thin blood'. Examples can continue ad-infinitum to the modern age: Racism and casteism at one end of the scale; clubs, societies, unions, guilds somewhere in between; and family at the other end of the scale. To parody Orwell – we are all brothers but some are more brothers than others. Hence, we behave well, but there is a limit to scaling. When the "we" becomes too large, behaviour degrades to fighting for oneself. It is not accidental that religions based on equality are intolerant of others and religions based on tolerance of others develop inequalities within themselves.

Every liberal society therefore displays the social asymmetry where a minority ends up dictating the norms of the society. It can be shown by a step by step reasoning that a small intolerant minority that is willing to sacrifice will eventually make a democratic society follow its norms.¹

The rhetoric of civil rights, transcending group identity in favour of a mythical national identity is what has been tried out for so many decades in our country. But, if the developments of the last few decades have taught us anything, it is that it has always been about 'identity politics'. (Even internationally, in many ways, the rise of the right wing politics and increasing anti-immigration policies can all be linked to the 'flattening' of the world and globalisation of labour). That being so, asking the police to be controlled by local 'sentiment' or the local 'community' is perhaps, in a very profound sense, undemocratic!

Perhaps the only way policing may become more democratic is to consciously distance it from local politics. This may appear to be totally counter-intuitive but some reflection will show that 'closeness' may actually prevent seeing the larger picture. (See for instance the style of policing and improvement in policing outcomes when the command and control largely shifts in the hand of the Election Commission prior to elections.)

Often, it is debated as to whether shifting 'law & order' from the State list to the Concurrent List of the Constitution would help. In my view, it is necessary but not sufficient. There is also a need to isolate decision making at the top levels in the police from local politics. This can be done by changing the nature of the IPS from a cadre based service to a truly All India Service by placing it under the Central Government. Positions of police leadership above the district level could be manned by IPS officers who are transferable across India. There will be objections raised regarding language,

¹ https://www.amazon.co.uk/Logic-Collective-Action-Economic-Studies/dp/0674537513

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service conditions or nature of the federalism we have- but these are not insurmountable. (The model of the higher judiciary comes to mind.)

Coupled with genuine Community policing (not the way it is presently practiced), this may be the way forward to keep the police both democratic and also professional. A myriad variety of programmes have been masquerading under the banner of community policing. 'Community policing' however defined so far, should not be now understood as merely a way to make the police more 'accountable' to 'the public'. The heterogeneity of interest in any community makes this exercise meaningless as no single set of interests can be said to be belonging to the 'community'. A better way to look at Community policing is to see it as an effort to reduce the institutional segregation of police by maintaining different channels of communication and cooperation with a variety of interest groups – both government and non government. This will force the police to confront conflicting values of different groups and democratize law enforcement.

The Constitution was designed to protect the people from an overzealous government. In the context of Police, this translates into protection from abuse. Our courts, especially at the appellate level, devote a significant portion of time and effort to police supervision. There is this narrative that the courts are responsible for the maintenance of the Constitution and are, therefore, the primary control point in the criminal justice system. While this is theoretically true, it obscures the fact that it is the Police who have the most dramatic impact upon the implementation of the principles of the Constitution. If the Police choose to disregard these principles in one-on-one confrontations with the public, there is little either the individual or the court can do. The stronger the belief in the Constitution held by the Police, the greater the likelihood constitutional rights will be honoured.

Much national debate will be required on this issue, but it is necessary. Policing is not like other government functions. If democracy is to be understood less as a system of self governance and more as opposition to established systems of unjust inequality, the special salience of good policing as a bulwark against private systems of exploitation and official systems of domination will become clear. This is the reason why reform of the IPS and policing cannot be linked with reform of other services and other government systems. Police reform also cannot happen by judicial or administrative fiat unless the built-in incentives, of local policies and police leaders with vested interest in maintaining the status-quo, are eliminated.

References:

Herman Goldstein, Policing a free Society, Ballinger Publishing Company, 1977 Amy Chua, Political Tribes, Bloomsbury, 2018 Nassim Nicholas Taleb, Skin in the Game, Allen Lane, 2018 Francis Fukuyama, Political Order and Political Decay, Profile Books, 2014 Denis Lacorne, The Limits of Tolerance, Columbia University Press, 2018 David Alan Sklansky, Policing and Democracy, 103Mich.L.Rev.1699 (2005), Heinonline

Pritchett, Lant. 2009, Is India a Flailing State?: HKS Faculty Research Working Paper Series RWP09-013, John F. Kennedy School of Government, Harvard University.



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Child Beggary and Trafficking – Challenges and Remedies

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Begging is a social problem present across all nations, but very rampant in developing countries. Begging profession is an old as human civilization. It ironically often receives sanctity by religious and cultural traditions in countries like India. At many levels it is also considered to be a family profession. The practice of using children for begging aggravates the nature of problem and presents an ugly scenario. According to a conservative estimate, 3 lakh children across India are forced to beg by unscrupulous parents and others by using methods like addiction to drugs, threat of violence and actual beating. About 10 - 15 per cent of these children are abducted and forced in to beggary. Many a time, children are maimed so that they became pitiable, evoke sympathy and therefore draw more alms from people. Child beggary also comes in more disguised forms like children selling toys and other artifacts or carrying images of gods and goddesses on their heads.

In many Indian cities, organized syndicates use children for begging by exploiting the innocence. They are deliberately made to appear in pathetic conditions and are sent to religious places, important fairs and traffic junctions to attract the attention of people. The public is made to think that their alms go towards feeding a poor and hungry child. But in almost all cases, it is the unscrupulous syndicates who act as their handlers who take all the money instead. As a consequence, children get a very paltry share and go hungry, resulting in malnutrition. Therefore, child beggary can be termed as the worst form of human trafficking.

Trafficking of children is a worldwide phenomenon affecting large numbers of boys and girls every day. Children and their families are often lured by the promise of better employment and a more prosperous life far from their homes. Others are kidnapped and sold. Trafficking violates a child's right to grow up in a family environment and exposes

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him or her to great dangers, including violence and sexual abuse. Forced child beggary and child trafficking are the most severe form of human rights violations.

Apart from beggary, children are trafficked either for labour or sexual exploitation. Child trafficking for labour may include bonded labour, domestic work or for agricultural labour. Children are used for sexual exploitation in the form of commercial sex work, pornography, sex tourism or forced prostitution.

Reasons for child beggary and trafficking:

There are several factors responsible for the increase in child beggary in recent times. Some of them are;

- 1. Poverty and hunger is the biggest driving force for children to go for begging on their own and sometimes resorted to parents;
- 2. Unemployment and low income of parents and guardians;
- 3. Abandonment of children by parents;
- 4. Organized begging mafia using kidnapped and abducted children
- 5. Becoming orphans due to natural disasters or communal / caste riots.
- 6. Gender and minority discrimination in society
- 7. Cultural and traditional practices especially in backward areas;
- 8. Lack of awareness among enforcement agencies

Child beggary and trafficking is a serious issue which needs to be prevented through education and enforcement mechanisms. The fight against trafficking and begging is recognized internationally. The following are the important international conventions regarding trafficking of children;

- 1. The Convention on the Right of the Child, 1989
- The Optional Protocol to the Convention on the Right of the Child on the Sale of Children, Child Prostitution and Child Pornography, 2000
- 3. The Convention on the Elimination of All forms of Discrimination against Women, (CEDAW), 1979.
- 4. The Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children.
- Declaration on Social and legal principles relating to the Protection and Welfare of Children, with special reference to Foster placement and adoption Nationally and Internationally, 3 December, 1986.
- SAARC Convention on Regional Arrangement for the Promotion of Child Welfare, 2002.

In order to prevent child trafficking, India has a fairly wide framework of laws enacted by the Parliament as well as some State Legislatures, apart from provisions of the Constitution. Some of them are;

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- 1. Article 23 of the Constitution guarantees right against exploitation; prohibits traffic in human beings and forced labour and makes their practice punishable under law.
- 2. Article 24 of the Constitution prohibits employment of children below 14 years of age in factories, mines and other hazardous employment.
- 3. Indian Penal Code, 1860 has 25 provisions relevant to trafficking; significant among them are:
 - Section 366A procuration of minor girl (below 18 years of age) from one part of the country to the another is punishable.
 - Section 366B importation of a girl below 21 years of age is punishable.
 - Section 374 provides punishment for compelling any person to labour against his / her will.
- 4. Immoral Traffic (Prevention) Act (ITPA Act) deals exclusively with trafficking; objective is to inhibit / abolish traffic in women and girls for the purpose of prostitution as an organized means of living.
- 5. Child Labour (prohibition and Regulation) Act, 1986 prohibits employment of children in certain specified occupations and also lays down conditions of work of children.
- 6. Information Technology Act, 2000 penalises publication or transmission in electronic form of any material which is lascivious or appeals to prurient interest or if its effect is such as to tend to deprive and corrupt persons to read, see or hear the matter contained or embodied therein. The law has relevance to addressing the problem of pornography. India has also adopted a code of conduct for Internet Service Providers with the objective to enunciate and maintain high standard of ethical and professional practices in the field of Internet and related services.
- 7. Juvenile Justice (Care and Protection of Children) Act, 2000 consolidates and amends the law relating to juveniles in conflict with law and to children in need of care and protection. The law is especially relevant to children who are vulnerable and are therefore likely to be inducted into trafficking.
- Karnataka Devadasi (Prohibition of Dedication) Act, 1982 is the Act that declared the dedication of girls for the ultimate purpose of engaging them in prostitution in declared unlawful – whether the dedication is done with or without consent of the dedicated persons.
- 9. The Karnataka Prohibition of Beggary Act, 1975 makes provision for collection of Beggary Cess by municipal authorities for setting up of Central Relief Committee (CRS). The CRS uses this fund for setting up rehabilitation centers for beggars.

Prevention of child trafficking and child beggary is a multi-agency task. Some of the Government Departments who are directly responsible for dealing with the issue are;

- 1) Police: As the face of the State which comes across child beggary on the streets, the Police have a major role to play in preventing it and protecting the interests of children found begging. Their role is outlined in the Juvenile Justice Act, 2000 under Section 3. Sec. 63(1-3) which has a provision for the setting up of Special Juvenile Police Units in all districts and cities to enable the police to deal more effectively with children and juveniles. In every police station it is mandatory in every police station to have a designated juvenile or child welfare officer with aptitude-appropriate training and orientation to handle the juvenile or the child.
- 2) Women and Child Development Department: The women and Child Development Department deals with the rescue and rehabilitation of children. It runs children's homes, juvenile care units and one-stop rehabilitation centers. The Child Welfare Committee set up in each District works under the administrative control of Women and Child Development Department. Apart from this, the department provides grant-in-aid to NGOs engaged in care and protection of children.
- <u>Department of Social Welfare</u>: The Department of Social Welfare establishes Beggars' Rehabilitation Centers and Central Relief Committees.
- 4) Department of Education: Under the Right of Children to Free and Compulsory Education Act 2009, the State shall ensure that all children between the ages of 6-14 years shall be in school. The Department of Education under the Sarva Shikshana Programme has a special programme for drop outs and out of school children. Children in beggary would benefit tremendously if included as a special intervention group.
- 5) <u>Health Department</u>: The Health Department plays an important role as one stop rehabilitation centers like SAKHI are housed in District Government Hospitals. In these centers rehabilitation and counseling is done in these centers to women and female children who are victims of trafficking or sexual abuse.
- 6) <u>Child Welfare Committees</u>: They are district based bodies and the competent authorities as designated under the Juvenile Justice (Care and Protection of Children) Act, 2000 and Amendment Act 2006 to address cases of children in need of care and protection. The protection and rehabilitation of children found begging come under their jurisdiction.

Strategies to prevent Child Beggary and Trafficking:

Although there are several laws to prevent child beggary and trafficking, the proper implementation of these laws is lacking. There is no coordinated effort between multiple agencies that are engaged in prevention, prosecution and rehabilitation under various 72 Dr. M.A. Saleem

laws. Therefore, there is a need to evolve sustainable strategies to prevent child beggary and trafficking. Some of them may be;

- Training and sensitization of officials of stakeholder agencies especially officials of Police Department and officials of Women and Child Development Department. The officers should be trained to have empathy and take proactive steps towards detecting and eliminating child beggary and trafficking.
- 2. Anti-Human Trafficking units should be established in all districts to prevent and investigate cases of child trafficking.
- 3. The focus of investigations should be on identifying handlers and traffickers involved in trafficking of children for beggary and other purposes.
- 4. Investigations and trials of child trafficking cases should be completed in time bound manner like in rape and POCSO cases.
- 5. A robust mechanism of rehabilitation of trafficked children that are rescued from the begging mafia should be developed. These children suffer from physical and psychological trauma due to violence, rape, threats, addiction and other means traffickers use to control the victims. A system of counseling and psycho-social support should be essential part of rehabilitation.
- 6. Child Welfare Committees should have specialists in child psychology for proper appreciation of problems faced by children who are victims of trafficking.
- 7. In order to prevent trafficking of children, some employment opportunities should be provided to the families in the form of skill development programmes. The skill development programmes should be created to match the needs of the local job market for the families.
- 8. Assistance to former trafficked victims who are reintegrated must include a follow-up component to assess their needs upon their return home where they often face serious problems, such as stigma and extreme poverty.
- 9. To prevent children from getting into beggary, the families of these children who are migrating or are trafficked for beggary need to be effectively covered under poverty alleviation and the convergence of various schemes under different ministries / departments.
- 10. Traditional and cultural practices that violate the full enjoyment of the rights of every child and support child beggary should be campaigned against.

Some Initiatives:

The Karnataka State Police has taken several measures to prevent the menace of child beggary. Police along with the Department of Women and Child Welfare, Child Rights Commission, District Child Protection Unit and the Health Department conducts joint drives like "Operation Smile" and "Operation Muskaan" on a regular basis to rescue children found begging at religious places, traffic junctions and roadsides. Special Juvenile Police Units have been established in all districts for counseling and rehabilitation of rescued and traced children. Rehabilitation centers like Child Welfare Committees (CWC), Childrens' homes and one-stop centers like 'Sakhi' and 'Gelathi' established by Women and Child Development Department play a vital role in the prevention of child trafficking.

However there is a need to involve civil society and Non-Governmental Organisations to make people aware of the issues related to child beggary. It also helps in curbing the traditional and cultural practices that violate children's right to grow and develop in a safe environment. Programs like "Operation Rakshane" by the Freedom Project is an example of NGO participation to bolster the efforts of State agencies in detecting, monitoring and eliminating all forms of child trafficking including child beggary.

References:

Dr. Intezar Khan, Child Trafficking In India: A Concern.

Anitha Kanaiya and Others – Child Beggary and Trafficking – A Handbook based on the field experience of "Operation Rakshane"

Salter, A, Treating Child Sex Offenders and Their Victims, Newbury Park, CA : Sage.

Smt. Mamatha Rao, Law Relating to Women and Children, Eastern Book Company.

Dr. P.M Nair, A Handbook on the Legal Process for the Police in respect of Crimes Against Children



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Rents, Sanctions for Prosecutions and Corruption Control: Evidence from the Prevention of Corruption Act, 1988, India.

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ABSTRACT

This context based work challenges the axiomatic argument that effectiveness of the anticorruption agencies can be improved by increasing the number of cases investigated by them. With due appreciation to the potential of the provisions related with sanction for prosecution in bringing efficiency to anti-corruption enforcement, this work attempts to empirically study the impact of delay caused in granting sanctions on the functioning of Indian anti-corruption agencies. This work has taken insights from the grand theories of corruption, the Principal- Agent Model and Collective Action Approach for designing the study. Ideas of rents and rent seeking have appropriately been applied in this work for exploring the intricate relationship between discretions available with the competent authorities and their decisions on the requests of anti-corruption agencies for grantingprior sanctions for prosecutions against the corrupt. Findings of the study show that the institutional requirement of prior sanction for prosecution impacts the functioning of anti-corruption agencies in India by becoming the strong determinant of filing charge sheets in corruption cases. This study argues that limiting the discretions of the competent authorities that decide the question of sanction for prosecutionby making them accountable for their decisions can be one of the conditions critical for increasing the effectiveness of anti-corruption enforcement in India.

KEYWORDS: Efficiency, principal- agent model, collective action, competent authorities, rent seeking, accountability, discretions, anti-corruption enforcement.

Rents, Sanctions for Prosecutions and Corruption Control: Evidence from the Prevention of Corruption Act, 1988, India.

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1. Rents; Rent Seeking and Corruption

Rents and rent-seeking are both ubiquitous and inevitable, and as long as there are rights there will be rent-seeking, says Steven M. Medema¹(1991). Rentsare the benefits that are created bystate for individuals, groups or companies etc. as part of the state policy. Any state policy like, regulations; subsidy; law etc. that results in incremental benefit to individuals or groups is a rent (Khan M., 2006). Preferential treatments; competitive lobbying (Lambsdorff, 2002); restrictions (Khan M., 2006) are also rents. According to Fischer (2004), rents are created to address the externalities or for making desired reallocation of resources in the society. Theoretically thus, rents are deliberate outcomes of public policy and they demonstrate the discretionary powers available with the statein resource redistribution. When the state undertakes efficient measures to distribute the rents, rent allocations can result in desired outcomes.

Rent seeking on the other hand is the process of influencing the state policy outcomes by spending resources. It is about the capability of individuals or groups to capture the redistributive powers of the state to benefit themselves. In plain language, rent seeking would mean profit seeking. Institutional economists see rent seeking as individual maximizing behavior that bears social costs. For them, rent seeking is socially wasteful (Tullock, 1993; Krueger, 1994). According to Mbaku J.M (2003) the most common rent-seeking behaviors include the underwriting of the campaigns of legislators; bribery;lobbying and political violence. Rent seeking as an unwanted by product of rents has been studied by Fischer (2004). His study is about the movement of state activity from allocation of rents for addressing the externalities to illegal rent allocations facilitating state capture by the powerful.

The definition of corruption, according to Lambsdorff (2007), is often derived from the Principal-Agent model. The Principal-Agent model assumes that corruption occurs when the agent violates the rules framed by the principal for personal gain. The behavior of agent becomes corrupt when he/she collude with third parties in order to maximize personal gain. What enables the agent to demand bribe is his/her ability to allocate rents by exercising the discretionary powers available with him/her. In order to demand or to increase the bribe an agent can apply & increase the red tape; jump the queue; collude with the supervisor etc. ThePrincipal-Agent model assumes that corruption is the result of information asymmetry that exists between principal and the agent. When the agent functions in high discretionary and low risk environment, the asymmetric information that the agent has with his/her principal and the discretions available to the agentcan lead to illegal rent allocations and rent seeking. Lambsdorff (2002) argues that rent seeking becomes corruption when the competition for preferential treatment is restricted to a few insiders. Such preferential treatments could cause or be the effect of corruption. For

¹ Taken from the abstract to the paper Medema (1991).

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Lambsdorff (2007), corruption is monopolistic form of rent seeking. Thus, the main purpose of bribing an agent is either to obtain an exemption from laws or to have one's enterprise benefitted (Mbaku, J. M. 2003). The principal too can abuse his/her discretions by colluding with the agent or by taking lenient view on the corrupt behaviors of the agent. Situations where the principal is not principled can lead to different types of corruption and such scenarios can eventually benefit the agent. Thus, the concepts rents; rent seeking; information asymmetry help us to understand the corrupt agreements too; and many anti-corruption interventions have been devised taking insights from these concepts.

2. Corruption in India

Like any other developing country, India also has high incidence of corruption. As per Transparency International (2019),India averaged 75.67 from 1995 until 2018 reaching an all-time high of 95 in 2011. In the Ease of Doing Business Index and in Global Governance Index, India stands at 77 and 124 (World Bank, 2017) respectively. These indicators present an idea about the state of corruption controlin India. But, India has been an active partner in the global fight against corruption; and evidently, in spite of multiple anti-corruption interventions in place for over seven decades, India continues to have high corruption index.

For Blackburn, et al, (n.d) there is an inverse relationship between corruption and development. While explaining the reasons for high incidence of corruption,Khan M.H (2006) argues that certain structural drivers of corruption in developing countries make corruption control difficult irrespective of their economic performance. Unregulated rent allocations & illegal rent seeking; lack of rule following behavior; lack of competitiveness (KhanM.H., 2006); inadequately designed rules; distribution of power (Perumal K, 2019) etc. are some of the drivers that causeand sustain high incidence of corruption in developing countries. These structural drivers havestrong bearing on governance as they raise the marginal costs of public resources and undo government's ability to correct externalitiesleading to inefficient outcomes (Olken &Pande, 2012). Explaining the problem of corruption in India, Bhushan rightly argues that corruption in India has grown to alarming proportions because of policies that have created enormous incentives for its proliferation (Bhushan P., 2011). Such incentives can impact the critical requirements of corruption control i.e. surety of detection and severity of punishments, making the anti-corruption interventions less effective.

Economic development to some extent is a movement from the environment of unregulated rents to regulated rents. In other words, it is about regulating the discretions available with the state in resource redistribution. Thus, regulating the discretions remains to be a constant endeavor for better governance. Ideas of transparency; accountability; participatory governance etc. are the efforts at limiting the discretions in order to enhance the regulatory efficiency. In developed countries rents remain mostlyregulated also because the most influential forces like the political movements; business corporations etc. are competitive and they demand corruption free environment to function (Khan, 2006). This argument essentially is about capacity of the state to have efficient regulatory environment and sees negative correlation between corruption and development. But, like most other developing countries, in India the most powerful actors are not competitive and they thrive on patronage and illegal rent seeking. This could partially explain the reasons for high incidence of corruption and lack of strong regulations for controlling corruption in India.

But, the idea of good governance which has already occupied considerable space in the policy arena has set standards for governance; and good governance will eventually become a pre-condition for development. It will compel the developing countries to set good governance as their governance priority by bringing rule of law; corruption control and development to the core of governance. It has empirically been shown that the variables rule of law; corruption control and good governance are highly correlated (Khan, 2006) implying that they impact each other. Thus, corruption control is an inalienable policy agenda for bringing in good governance and it requires the institutional framework that compels effective anti-corruption enforcement. Singh, B.P (2008) rightly argues, good governance does not occur by chance; but it must be nourished explicitly and consciously by the nation state.

3. Corruption Control in India

Anti-corruption interventions in India do consist of anti-corruption agencies both at central and state government levels; vigilance units in every public department and technology based interventions. In addition, India has brought-in the transparency legislation the Right to Information Act, 2005 as a measure to open-up public institutions. Thus, the broad framework of Indian corruption control tools is based on western experience. The Indian approach aims at systemic corruption control by applying the solutions prescribed by both Principal – Agent and Collective Action approaches. While the principal-agent modelfavors reducing the discretionary powers of agents and better control and accountability mechanism; the collective action approach advocates in favor of universal norms like, transparency; accountability; and opening up the institutions for public scrutiny. In essence, the Indian approach believes that these prescriptions would destroy the opportunity structures that promote and sustain corruption.

Explaining the structural driver under study in this work, the Indian anti-corruption legislation the Prevention of Corruption Act, 1988, as amended in 2018, contains certain provisions that mandate the Indian anti-corruption agencies to take prior approvals from the government authorities for instituting inquiries; enquiries and investigations and to obtain prior sanctions (permissions) for prosecuting the accused public servants in corruption cases. This work attempts to empirically study the impacts of one of these two

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drivers i.e. taking prior sanction for prosecutionagainst the public servant accused in corruption cases on the functioning of Indian anti-corruption agencies.

The Indian anti-corruption agenciesright from their inception remain dependent on government approvals for launching prosecutions against the public servants in corruption cases, irrespective of the merits of evidencecollected during their investigations. The stated reason for obtaining prior sanction for prosecution is to protect the honest public servants fromfrivolous and vexatious prosecutions (Central Vigilance Commission, 2006). Whether this institutional arrangement of taking prior sanctions impacts the professional work of the Indian anti-corruption agencies in tackling unregulated rents; motives; opportunity structures etc. for controlling corruption is the objective of this study.

There is considerable literature availableabout the effectiveness of anti-corruption agencies. Anti-corruption agencies do exhibit variations in their performance across jurisdictions and also there are differences in the content of the legal instruments that they exercise, sustaining the debate on functional independence for anti-corruption agencies. The United Nations Convention against Corruption (UNCAC)² and the Jakarta statement³ on anti-corruption agencies also underline the importanceofindependent anticorruption agencies for better corruption control. According to Quah (2017), anticorruption agencies raison d'être is to act as an independent watchdog that investigates all corruption cases impartially without fear or favor regardless of the position, status or political affiliation of those being investigated. Literature show empowering the anticorruption agencies requires certain institutional features that can facilitate their functional autonomy. Experiencesof successful anti-corruption agencies like, the ICAC⁴ of Hong Kong, CPIB⁵ of Singapore and OGE⁶ of the United States of Americashow that the anti-corruption agencies must be functionally independent for effective corruption control. Functional independence for the anti-corruption agencies must inevitably include the power to suo moto investigate and also to prosecute the corrupt. The anti-corruption agency of Hong Kong has power even to incarcerate the suspects in case of risk of flight (Heilbronn J, 2009). The Malaysian anti-corruption law mandates their anti-corruption agency toexamine the practices, systems and procedures of public bodies in order to facilitate the discovery of offence (Malaysian Anti-Corruption Commission, 2016). While explaining the scope of corruption control work done by anti-corruption agencies De Souza (2002) arguesthat the mission of anticorruption agencies goes beyond legal and criminal provisions in force. De Speville, et al, (2013) identify distinctiveness of anti-corruption agencies from other enforcement agencies as one of the prerequisites for effective anti-corruption agencies. Powers to

² UNCAC is the only legally binding universal anti-corruption instrument. It came into force in December, 2005.

³ It's a statement on principles for independent anti-corruption agencies.

⁴ Independent Commission against Corruption.

⁵ Corrupt Practices Investigation Bureau.

⁶ Office of Government Ethics.

initiate action *suo moto* and to prosecute the corrupt have been cited in academia to be critical for effective anti-corruption agencies. Heilbronn (2004) rightly argues that the anti-corruption agencies cannot succeed in the absence of the laws necessary to carry out their anti-corruption functions.

This work, without undermining the impacts/influence of other institutional drivers, attempts to study the impacts of the variable, delay caused in granting sanction for prosecutions on the functioning of anti-corruption agencies in India. Quantitative data for this study was collected from the annual reports of National Crime Records Bureau; Central Vigilance Commission and from various Journal articles. Appropriate statistical tools, like cumulative frequency distributions; pair plots etc.have been used for explaining the behavior and distribution of the data. This study uses linear regression technique forbuilding statistical model and for drawing inference.

4. Sanctions for Prosecutions in Corruption Cases

Sanction for prosecution is a pre-condition for taking cognizance of the offence by trial courts in corruption cases according to section 19 of the Prevention of Corruption Act, 1988 (Government of India, 2018), though prior sanctions are not mandatory for filing charge sheets by the ACAs after completion of their investigations. But, the ACAs have been mandatedto submitsanction orders for prosecuting the public servants before trial courts for initiating judicial proceedings against the accused in corruption cases. If cognizance of an offence is taken by atrial court without valid sanction orderthe cognizance taken becomes bad in law and the accused is at benefit. The investigating agencies await sanction orders for filing their charge sheets also because permissions are not granted by the competent authorities in all their proposals. The authorities competent' to grant sanctions enjoy discretionary powers in deciding the requests of the anti-corruption agencies for granting prior sanctions; and their decisions cannot be challenged. Thus, in practice, the anti-corruption agencies submit their charge sheets in trial courts only after obtainingsanctions for prosecutions from competent authorities. This makes it convenient for the anti-corruption agencies to file closure reports when their proposals for granting sanctions are not positively considered by the government authorities. In addition to denial of sanctions, there are issues of considerable delays in granting prior sanctions. Though there is a time frame of maximum four months for deciding the requests for sanctions, set by the Supreme Court of India way back in 1997 (Supreme Court of India, 1997), there are delays in deciding the proposals for prosecution sanctions submitted by theanti-corruption agencies (Central Vigilance Commission, 2015). Since the competent authorities enjoy discretions in deciding sanction matters; and since there is no provision for appeal against denial of sanctionsthe anti-corruption agencies face two kinds of challenges in their professional work on this front, 1. Denial of sanctions; and 2. Delay in granting sanctions. In this work, delay caused in granting sanctions is being studied in order to understand its impact on the functioning of Indian

⁷Competent authority is the authority that can remove a public servant from service.

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Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
CS ⁸	2041	2406	2255	2268	2162	2462	2870	2543	2648
PS ⁹	66.82	55.19	58.71	57.76	52.49	49.55	47.03	55.17	52.49
Year	2010	2011	2012	2013	2014	2015			
CS	2929	2947	2961	3084	3690	4224			
PS	46.36	52.18	52.98	46.04	52.33	36.95			

anti-corruption agencies. The following table presents year-wise detail of cases charge sheeted; and the proposals awaiting prior sanctions for prosecutions.

(Source: Annual reports of NCRB & CVC)

Secondary data for this study were collected from the annual reports of National Crime Records Bureau (NCRB) and the Central Vigilance Commission (CVC). Data from 2001 onwards were considered for this study because the time frame for deciding the proposals for prior sanctions was fixed only in 1997 by the Supreme Court of India. Though there is no credible data showing how exactly the time taken for deciding the requests of theanti-corruption agencies for granting sanction for prosecutions delayed the submission of charge sheets and subsequent judicial proceedings, the causal relationship that exist between the variables under study helped to infer that delays caused in granting sanction for prosecutions, external to the anti-corruption agencies, impacts filing of charge sheets by the anti-corruption agencies. Evidences show that there are delays of even thirteen years for granting sanction for prosecutions (Supreme Court of India, 2001). In the absence of data regarding the exact period of delay caused by different public authorities in granting sanctions, available data showing the detail of cases pending for prior sanctions was treated aspredictor variable. From the number of cases pending for sanction for prosecutions their percentage to the number of cases charge sheeted was calculated. Cases pending for sanction for prosecution denote the cases in which investigations were complete and the anti-corruption agenciesdid await sanctions of the competent authorities for filing charge sheets in trial courts. Proposals for granting sanction for prosecutions are submitted by anti-corruption agencies upon completion of their investigations narrating the detail of evidences available against the accused public servant. The percentage of cases pending for sanction for prosecutions to the total number of cases charge sheeted could indicate the magnitude of the problem as it did range from 36.9 to 66.8 percent of the cases charge sheeted by various anti-corruption agencies for the period under study. This study does not use primary data because of the availability of original data and methodological limitations of the issue under study.

⁸Number of charge sheets submitted by the anti-corruption agencies.

⁹ Percentage of cases pending with competent authorities for granting prior sanctions for prosecutions.

5. Descriptive Statistics

5.1 Cumulative frequency distribution for the percentage of cases pending for sanctions for prosecutions

Cumulative frequency distributions of the grouped data 1. Number of charge sheets filed, and 2. Percentage of cases pending for sanction for prosecution from 2001-2015 were prepared in order to find out the likelihood of certain type of data falling within certain frequency distributions. Statistically cumulative frequency distributions give the distribution of values of median, upper & lower quartile and inter quartile ranges. As per cumulative distribution graphs shown below the Y axis values 4, 8 & 12 intersecting the graph give the values of lower quartile, median and upper quartile values. By subtracting upper quartile values from lower quartile values inter quartile range values were calculated.

Points on the line representing cumulative frequencies can be used for determining the values of the variable i.e. the percentage of cases pending sanction for prosecutions. The distribution graphs show near normal distribution of the data.



5.2 Cumulative frequency distribution for the number of charge sheets filed

Similarly, the cumulative frequency distributions prepared for the number of charge sheets for the period under study show the following distributions.



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From the graphs shown above the cumulative curve values (both more than and less than Ogive) for first quartile; median; third quartile; inter quartile range were calculated for dependent and independent variables separately.

	Cases pendi	ng for sanction	Cases in which Charge Sheets were submitted		
Values	More than	Less than	More than	Less than	
	Ogive	Ogive	Ogive	Ogive	
1st quartile	56	48.5	2900	2400	
Median	52	53	2600	2700	
3rd quartile	48	57	2300	3000	
Inter quartile	8	8.5	600	600	
range					

The Inter quartile range values for the given data set give indication about the spread of the data. For the given data set values of inter quartile range appear to be small and thus, it can be concluded that the data are fairly concentrated for the period under study.

Pair Plots matrix for each pair of the variables were prepared in order to display the distribution of both the predictor and outcome variables and the relationship between them. Distribution of the variables and their relationships can be visualized as below. Distribution of data points does show the pattern indicating a high negative correlation between the variables under study.



6. Statistical Inference

As discussed in this work already, filing of charge sheets and sanctioning for prosecutions have a causal relationship. In order to estimate the impact of the identified predictor on the dependent variable, year -wise percentage of cases pending for sanction for prosecutions, treated as predictor variable were regressed with the number of cases charge sheeted by the anti-corruption agencies (dependent variable Y).

6.1 Regression results:

Pearson correlation coefficient analysis for the given variables generated the following results.

	Sanctions pending	Charge Sheets filed
Sanctions pending	1.00000	-0.77208
Charge sheets filed	-0.77208	1.00000

The correlation coefficient of -77208 shows high negative correlation between the variables. Thus, it can be inferred that with an increase in the percentage of cases pending sanctions for prosecutions number of charge sheets filed by the anti-corruption agencies comes down.

Regression Statistics

Multiple R	0.77208
R Square	0.596108
Adjusted R Square	0.565039
Standard Error	389.141
Observations	15



Charge Sheets Vs Pending sanctions

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ANOVA

	DF	SS	MS	F	Significance F	
Regression	1	2905471	2905471	19.1868	0.000744	
Residual	13	1968599	151430.7			
Total	14	4874070				
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	6268.424	805.8783	7.778375	3.04E-06	4527.43	8009.419
Percentage of sanctions pending	-67.1714	15.33498	-4.38027	0.000744	-100.301	-34.0422

6.2 Significance of the model

As per regression results the multiple correlation coefficient of the model is 0.5961 indicating that about 60 % variability in the dependent variable is explained by the predictor. The remaining 40% of the variability could be due to various other factors. For example, in addition to pending sanction for prosecutions, filing charge sheets can be delayed by factors like, late receipt of experts' reports; absconding accused etc. These aspects have not been studied in this work.

This study used analysis of variance (ANOVA) technique for testing the significance of the linear regression model. As per results of analysis the value of F statistics is 19.1868 and its associated P value is 0.000744. For the purpose of this analysis, the level of significance was kept at 0.05. Since P value of the model is less than the alpha value of 0.05, it can be concluded that the relationship that exists between the predictor and outcome variables at 5% significance level is not by chance and has statistical reasons. In other words, the inference that the issue ofpending sanctions for prosecutions impacts the functioning of anti-corruption agencies in India is not random.

Data analysis in this work has helped to evolve a statistical model. As per regression results, a=6268.424 and b=-67.1714. Thus, the regression model derived from data analysis is as follows: Y=-67.1714 X +6268.424 orNumber of charge sheets filed = -67.1714 X +6268.424 (X=Percentage of cases pending for sanction for prosecution). As per results of analysis, t-statistic for the intercept and slope are 7.778375 and -4.38027 respectively. In both cases, the corresponding P-values are less than the alpha value of 0.05. Thus, it is concluded that 1. The values of intercept and slope are not zero and 2. The regression line does not through the origin. Data analysis further shows that 95% confidence interval for the predictor is (-100.301, -34.0422). This indicates that rate of change in the dependent variable lies in the interval (100.301, -34.0422) 95% of times when there is a unit change in the predictor.

For the given data set, the standard residuals appear to be randomly scattered around 0.0 (Y- axis). Hence, it can be assumed that the regression model does fit reasonably well for the given data.Normality of the residual distributions was done through quantile normal plot. Probability plot for the data set shows that the distribution of error terms is normal as the points scatter around a straight line. This shows robustness of the model.



From the results of analysis it can be inferred that delay caused in granting sanctions for prosecutions in corruption casesnegatively impact the professional work of anticorruption agencies in India. Thus, merely by increasing the numbers of cases for investigation the effectiveness of anti-corruption agencies cannot be improved, because filing of charge sheets in a corruption case has been the function of prior sanctions for prosecutions; and the decision to grant prior sanctions is external to the anti-corruption agencies that investigate the instances of corruption. Another implication of this study could be thatwhen the principal is not principled(Klitgaard, 1998)in controlling the corrupt behaviors of the agent, the claim of efficient corruption control can become misleading. In either case, it will impact the effectiveness of anti-corruption agencies.

7. Limitations of the Study and Further Research Possibilities

Though all possible efforts were made to avoid/reduce limitations, there could still be design related limitations in this work as the work had to honor the word limit. Secondly, since this study remained specific to two particular variables that have causal relationship with each other secondary data was preferred, though using primary data could have helped to have more incised understanding into the relationship between the variables. Still, a modest attempt was made in this work to draw causal inferences through various secondary evidences.

Correlation between high discretion & low risk in decision making and illegal rent seeking has widely been studied in the academia; and many corruption control tools have been evolved to limit the discretions available to the agents. In this background, causal

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relationships between various variables that act as determinants of granting sanction for prosecutions can be studied through primary data. There are promising possibilities to study the procedural efficiency of the sanctioning process itself as the decision of granting prior sanctions remains discretionary. It would be interesting to study the element of subjectivity; the principal-agent nexus; fear of getting exposed; information monopolyetc.in the sanction process for better policy prescriptionsand for developing context specific interventions.

8. Conclusion

This context based work aimed to study the impacts of one of the institutional constrains i.e. delays in granting sanction for prosecutions on the professional effectiveness of anticorruption agencies in India by exploring the causal relationship that exist between two specific variables. The study took insights from Principal- Agent frame work and the Collective Action approach for designing the study and for drawing causal inferences. Application of various statistical tools helped the study to have empirical understanding about the impacts of the predictor on the outcomevariable. This study has, in addition to establishing the negative impacts of the predictor variable, has evolved a statistical model that can be used for making context specific predictions. Results of this study can help to identify and address the contentious issues between the anti-corruption agencies and various public authorities that decide prosecution sanction related matters.

Evidently, the process of deciding the sanction matters remains unregulated as it remains discretionary. The Indian anti-corruption legislation does not contemplate punitive action for abusing the process of deciding sanctions. If the process of prior sanctions vulnerable to abuse by remaining unregulated, the critical requirements for corruption control viz, surety of detection and severity of punishment can get compromised as sanction for prosecution has been the function of filing charge sheets by the anti-corruption agencies. According to World Bank (2014), the combination of high discretion and low accountability can create perverse incentives making the institutions prone to reckless decision making. Theoretically at least, the absence of binding procedures and lack of punishment for abusing the process of sanctions can lead to unregulated rent allocations and illegal rent seeking of different kind for causing delay or denial of sanctions. Thus, holding the authorities that decide the sanction matters accountability here must include answerability for the decision taken and for the delay caused.

REFERENCES AND BIBLIOGRAPHY

- 1. Aida, and Rzayeva. (2018).*The role of e-government in reduction of information asymmetry in developing countries on the example of Azerbaijan*. Advances in Economics and Business, 2018: 209-217.
- 2. Andrews, et al., (2016). *The big stuck in state capability for policy implementation*. Center for International Development, Harvard University.
- 3. Bhushan, P., (2011, September). *Dealing with mega corruption. www.india.seminar.com*
- 4. Blackburn. (n.d). *Endogenous corruption in economic development*. milwaukee: Department of Economics, University of Wisconsin.
- 5. Central Vigilance Commission. (2015). *Guidelines for checking delay in grant of sanction for prosecution*. New Delhi: Central Vigilance Commission.
- 6. Chassang. (2016). *Decision theoretic approaches to experiment design and external validity*. Abhijit Banerjee.
- Dunn, J. & Schweitzer, M. E., (2004). Why good employees make unethical decisions. In: J. Ronald E. Kidwell & C. L. Martin, eds. Managing organisational deviance. New Delhi: SAGE Publications, pp. 39-61.
- 8. El-Ayouty, Y., (2003). *Combating corruption for development: the rule of law, transparency and accountability*. Westport: Greenwood Publishing Group.
- Government of India. (2003). Available at: <http://legislative.gov.in: http://legislative.gov.in/sites/default/files/A1946-25.pdf> [Accessed 24 August 2019].
- Government of India. (2018). [Online] Available at:< http://www.egazette.nic.in/WriteReadData/2018/187644.pdf> [Accessed 26 September 2019].
- 11. Heilbrunn, J. R., (2004). Anti-corruption commissions:panacea or real medicine to fight corruption? Washington: World Bank Institute.
- 12. Jhonston. (1998). *Fighting systemic corruption: social foundations for institutional reform*. European journal of development research .
- 13. Khan, M., (2004). *Determinants of corruption in developing countries: the limits of conventional economic analysis.* Susan: Rose-Ackerman.
- 14. Khan, M., (2006). *Governance and anti-corruption reforms in developing countries: Policy, evidence and ways forward.* New York: United Nations .
- 15. Kleibrink, A., (2015). *Political elites and decentralization reforms in the postsocialist states.* 1st ed. London: Palgrave Macmillan.
- Klitgaard, R., (1988). Controlling corruption. Berkley CA: University of California Press.
- 17. Lambsdorff, J., (2000). *Making corrupt deals: contracting in the shadow of the law.* Journal of economic behaviour and organizations , 221-241.
- 18. Lambsdorff, J., (2002). *Corruption and rent seeking*. In Lambsdorff.J.G, *Public choice* (pp. 97-125). Gottingen: Universitat Gottingen, Germany.

- 88 Kannan Perumal
 - 19. Lambsdorff, J., (2007). *The institutional economics of corruption*. Cambridge: Cambridge University Press.
 - 20. Maesschalck, J. & Bertok, J., (2009). *Towards a sound integrity framework: instruments,processes, structures and conditions for implementations.* Paris: OECD.
 - 21. Malomo. (2013). Factors influencing the propensity to bribe and size of bribe payments: evidence from formal manufacturing firms in West Africa. Sussex: University of Sussex.
 - Malaysian Anti-Corruption Commission. (2016). www.sprm.gov.my. [Online] Available at: https://www.sprm.gov.my/index.php/en/corporateinfo/mengenai-sprm/organization-info/functions> [Accessed 07 July 2019].
 - 23. Mbate, M., (2016). *Who bears the burden of bribery? evidence from public service delivery in Kenya*. London: *Department of International Development*, London School of Economics and Political Science.
 - OECD, (2012). http://www.oecd.org. [Online] Available at: http://www.oecd.org/cleangovbiz/toolkit/50042935.pdf [Accessed 09 August 2019].
 - 25. Olken, et al., (2011). *Corruption in developing countries*. Research paper, Harvard: Harvard University, 2011.
 - 26. Panth, S., (2011). *Changing norms is a key to fight everyday corruption*. Washington: International Bank for Reconstruction and Development.
 - 27. Perumal, K., 2019. *In-built safe-guards for anti-corruption enforcement: to protect the innocence or to protect the corrupt? a case study on the effectiveness of the Prevention of Corruption Act, India*,Research article.Vienna: International Anti-Corruption Academy.
 - Perumal, K., 2019. State capacity, drivers of corruption and anticorruption interventions: contextualizing corruption in Indian context- a rational choice approach. Review article: International Journal of Development Research, IX(11), pp. 3323-3330.
 - 29. Pinto, et al., (n.d.). Corrupt organizations or organization of corrupt individuals? two types of organization level corruption. Academy of management review, 685-709.
 - 30. Princeton University. (n.d). *What is political economy?* New Jersey: Princeton University Press.
 - 31. Quah, J. S., (2017). *Anti-corruption agencies in Asia-Pacific countries*. Singapore: Transparency International.
 - 32. Schwertheim, H., (2017). *Innovation in anti-corruption approaches*. Stromsborg: Institute for Democracy and Electoral Assistance.
 - Singh, B., (2008). The challenge of good governance in India: need for innovative approaches. New York: John Kennady School of Governance, Harvard University.
 - 34. Sousa, L., (2010). *Anti-corruption agencies: between empowerment and irrelevance*. Crime, Law and Social Change, 5-22.

- 35. Supreme Court of India. (1997). *Vineet Narain & others Vs Union of India* (Barucha, S.C. Sen December 18, 1997).
- Supreme Court of India. (2001). Mahendra Lal Das Vs State of Bihar, 1038/ 2001 (M.B Shah, R.P Sethi October 12, 2001).
- 37. Transparency International. (2019). *Anti-corruption agencies assessment and methodology*. Berlin: Transparency International.
- 38. World Bank.(2014). [Online] Available at: <https://tcdata360.worldbank.org/indicators/hc153e067?country=BRA&in dicator=364&viz=line_chart&years=1996,2017> [Accessed 03 September 2019].
- WorldBank.(2018). [Online] Available at: <<a href="https://tcdata360.worldbank.org/indicators/hc153e067?country=BRA&ind



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Transfer – Bane or Boon

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Transfer is an aspect of management of government to ensure that officers do not cultivate fiefdoms and personal interests. It is in the order of things. To prevent ossification, stagnation, entrenchment of personal interest, it is inviolable. It is part of the unwritten contract as none can claim to continue for indefinite period on the same post. It is a must, generally, when the officer is promoted to a higher level. However, there are rules that frequent transfers are to be avoided to enable the officer to gain experience and contribute for which a period of between two to three years is considered appropriate. Consequently there ought to be a solid ground in case officer is transferred abruptly or out of turn. Since sudden transfer disturbs the balance of life both professionally and socially, the former considered as diminution of one's talents and the latter having impact on the normal life of the family, it is imperative to examine whether something can be done about it so that officer performs in a just and legal manner. It is, therefore, useful to examine the rationale of transfer.

There is a general lament that since police is under control of politicians, it is unable to deliver its best by functioning according to law. This is expressed by Julio Ribiero: "The police in India today are not expected to uphold the rule of law... Politicians of all parties and ideologies treat the bureaucracy and the police as private fiefdoms that will bow to their wishes as and when demanded". (*The Indian Express;* September 18, 2017). The implication is that the officer who is not compliant gets transferred to appease the political interests.

Bimal Jalan in his *Priorities for the Future* (Penguin Viking, New Delhi; 2017) has expressed the same thought: "With transfers being affected at very short notice at the instance of ministers, the tendency among civil servants is that, in order to survive, it is best to conform to ministerial wishes, however unsustainable". He also quotes *The National Commission to Review the Working of the Constitution* (Government of India;

^{*}IPS (Retd.), (1964 Batch)

New Delhi; 2002; p.105) thus: "Arbitrary and questionable methods of appointment, promotions and transfers of officers by political superiors also led to corrosion of the moral basis of its independence. It has strengthened the temptation in services to collusive practices with politicians to avoid the inconvenience of transfers and for the officers to gain advantage by ingratiating themselves to political masters. They would do the politicians' biddings rather than adhere to rules. Lest the situation becomes more vicious, it is necessary that a better arrangement is conceived under the Constitution". Prakash Singh too is critical of police being answerable to the political executive. 'What we have today is Ruler's Police. What we need is People's Police' (*The Indian Express;* September 29, 2017)

The capture of reality in the above comments is faultless and the expression of intentions unquestionable. There is empathy for the sufferer. There is a desire to insulate police from political control. Towards this effort, there have been two attempts by the Supreme Court to ease the situation by making transfers more rational. In the *Prakash* Singh v Union of India (2006 AIR SCW 5233), the Court had issued directions to constitute State Security Commission, a watchdog body, 'to ensure that the State Government does not exercise unwarranted influence or pressure and for laving the broad policy guidelines so that the State police always acts according to the laws of the land and the Constitution of the country'. The SC also mandated 'a minimum tenure of at least two year irrespective of his date of superannuation' and to be relieved only in exceptional cases in case of his conviction or if he is otherwise incapacitated. There is also a direction on minimum tenure of two years, 'unless it is found necessary to remove them prematurely', for 'police officers on operational duties in the field like the Inspector-General, Deputy Inspector general of Police in-charge Range, Superintendent of Police in-charge district and Station House Officer in-charge of a Police Station'. Similarly, the Police Establishment Board 'shall decide all transfers, postings, promotions and other service related matters of officers of and below the rank of deputy Superintendent of Police'.

Similarly, there is a direction to regulate transfers administrative officers in another decision of the SC in *T.S.R. Subramanian & Others v. Union of India & Others (Writ Petition (Civil) No. 234 of 2011, decision on 31 October 2013)* wherein the apex court has directed the Centre, State Governments, and the Union Territories to constitute Civil Service Boards 'within three months' till the Parliament brings in a proper legislation. The Court observed that "at present the civil servants are not having stability of tenure, particularly in the State Governments where transfers and postings are made frequently, at whims and fancies of the executive head for political and other considerations and not in public interest... Fixed minimum tenure would not only enable the civil servants to achieve their professional targets, but also help them to function as effective instruments of public policy. Repeated shuffling/transfer of the officers is deleterious to good governance''. It further added that "civil servants cannot function on the basis of verbal or oral instructions, orders, suggestions, proposals, etc. and they must also be protected

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against wrongful and arbitrary pressure exerted by administrative superiors, political executive, business and other vested interests."

In spite of the decisions of the Supreme Court, there has not been enough change to make the police officers feel secure in their tenure. They are on the tenterhooks of suspense in operational posts and look to the mind of the political bosses. The technology of transfer continues to be used as and when the need arises without regard to the procedures directed by the apex court. The state governments have not given adequate attention to both decisions of the SC. The control of the political executive continues unabated. There is hardly any officer who has approached the Court for implementation of its directions. They fear the consequences as they have to spend their tenure within the cadre. So they let it lying low by imagining the cost of litigation and the subsequent harassment. However, the strategy of transfer as a control over officers shall continue to be used by those entrusted with public affairs.

The Problem: Why officers fear transfer

The control by politicians serves as both a stick of transfer and a carrot of extension of service, posting to an 'important' assignment, or the officer not suffering dislocation. The threat of transfer is thus considered as a stimulus for the officer to do the biddings of seniors, especially the politicians. The scare of transfer makes officers bend backward and even crawl. There is a danger in this view. The officer anticipates the desires and expectations of those in power and suo motu takes action so as to conform to the standards laid down by them.

Nobody bemoans transfer of an incompetent or corrupt officer or one who has indulged in indiscipline thus diminishing the image of the department, or having been involved in a crime, especially one pertaining to torture. What is disturbing is the untimely transfer of a good officer for reasons not disclosed, but only known to the affected officer who might have incurred the wrath of the seniors or political boss. It is this aspect of transfer that is the subject of the present study. However, there are three instances of transfer that seem objectionable.

First, transfer of district chiefs immediately after ruling party's defeat in election is symbolic of the expectations of the political executive to seek help from officers in influencing or affecting electorates or help in other ways as well as the venom on the officer for the debacle. Such transfers may be called 'routine' as a camouflage against criticism, but the beans are out for the public who 'know' that it is a method of punishing officers for low performance. They are intelligent enough to interpret the occasion for it. Second instance is when the transfer of the political executive as it might have hurt the ruling establishment if its political supporters who had functioned on the tacit understanding of the bosses to act fall within the grip of law. And the third occasion may be when the

officer is too strict to accommodate the minions of the party in their day-to-day demands that are not conceded by the officer as being not reasonable. This is the discomfort of the local leaders, often petty, who want to have, and show, a clout with the administration by appearing to help their followers for various tasks.

There are three actions that the political executive is capable of taking if the officer has 'faulted'. (a) The criminal case can be registered against the officer in case of grave misdemeanor; (b) a departmental enquiry can be ordered; and (c) the officer can be transferred. Whereas as the first two require proof and a lot of evidence, besides the sanction to prosecute by the appointing authority and there is play of courts where relief for undue filing of a case can be sought or the administrative tribunal may be approached in case of enquiry for an expeditious disposal to clear the officer of the ignominy and risk to his promotion, the transfer is the easiest option that does not involve any legality or an outside institution to interfere. Transfer is therefore a soft option. The political boss may avoid other options, but this is the least he can do.

It would be useful to examine the rationale in the context of law. First, transfer is not a category of penalty prescribed in law or conduct rules. It is just an event in the course of one's professional career. Transfer is the order of the system, does happen, but after a suitable gap of two or three years. It is an untimely transfer that creates fear in the mind of the officer who interprets it as disdain of the government about his performance. Though it is the prerogative of the government, it should not be expressed as the officer being spurned by the authority as a consequence of displeasure at the outcomes if there has been no fault of the officer who worked in strict compliance with law and rules.

There is no problem if the officer is transferred, even before the duration, in case of urgency for having better control over a situation that has deteriorated. The issue arises only when the transfer is before completion of tenure and to a less important assignment. Such a transfer is considered as a penalty. There are thus two aspects of transfer – (a) untimeliness, (b) posting to a position lower in the hierarchy of assignments.

Hierarchy of jobs

It is unfortunate that the department itself has created notion of hierarchy of assignments. The jobs that have more opportunity of using law, especially the power of arrest, or to regulate conduct like traffic, are considered more important than those pertaining to intelligence, stores, communications, lines or reserve force, transport, planning, police rules, or office management. In other words, jobs in police stations, subdivisions, district, range or zone, chief of law and order, or as chief of police in the state are important. The criteria that determine the hierarchy appears to be

- use of law that invests the officer with tremendous powers and responsibility
- use of *discretion* that is possible only under law and
- visibility in performing duties.

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The acceptance of hierarchy among the officers is a professional reality. Officers use 'contacts', political or administrative, for seeking important assignment. The so-called recommendations are for a posting in police station, district, sub division, range, etc., as the case may be. Other critical assignments are crime branch, licensing, and traffic that have an element of use of power, discretion, and visibility. None has approached for or sought a transfer to armed police, training school, or even intelligence, because most of these assignments lack prestige and aura in police circles.

There are, therefore, two factors that make the officer dread transfer. One, transfer is feared as causing dislocation, both mental and physical. The officer fees diminished as it is symbolic expression of anger of authority at his act of commission or omission. If the transfer is to another geographical location, the officer dreads the move as affecting the family and fear of a new location, problem of adjustment, etc. Secondly, in view of the hierarchy of assignment, those in the *responsibility, discretion, and visibility* category feel threatened on diminishment of their status. They therefore keep themselves on the right side of authorities having power to transfer. This could mean (a) not doing their work as per law or (b) not to annoy the bosses on any count. They are in the look out of and feel the impulse of those in power and act accordingly. It is a case of transmutation of steel into bamboo. They bend when there is a 'personal' need, with the object of not surrendering their position to a less powerful one. Hence there are acts of commission and omission that have the blessings or tacit approval of those in power.

Coping strategies

It is thus in the context of an unjustified transfer that the officer must have an orientation to face it, this being a fact of situation as the political executive has the prerogative and has been openly defying the mandates of the Supreme Court in the two judgments cited above. But whatever be the apprehensions, the officer must not entertain feeling of guilt if he has performed his duty as per law, contingency of situation that justified action, or an interpretation/assessment of the problem on the site in good faith. The officer is endowed with legal powers to exercise right of private defense, acting in good faith and the principle of necessity.

Transfer being a critical aspect in officer's career, it is useful to examine whether something can be done about it so that officers perform professionally as per law. It is useful to examine the rationale of transfer in the context of law. Though there is a lukewarm reception to the judgments of the Supreme Court, the legal battle must continue to seek implementation of its decisions and ensuring that directions of the bodies like the State Security Commission or the Civil Service Board, in exceptional cases, are well-documented and reasoned. Besides, it is the task of the seniors not to create fears among the working officers by surrendering to the abject reality but questioning at every stage the undeserved transfer, besides encouraging officers to bear the onslaught of dislocation. Rather than discourage them through paranoia that creates in them sense of weakness, the seniors must quote their examples as to how they shielded themselves from unreasonable attacks, desires, threats or wishes of those who could manipulate their transfer through political pressures, mechanism, or machinations.

Thus how to overcome the dread of transfer? What attitudes are necessary to cope up with this inevitability (normal or sudden)? What can be done to make it more acceptable? If one looks into the broader aspects of transfer, it is possible to survive the onslaught of the political bosses if one has the right attitude, much beyond the mundane self-interest. Here are a few strategies that can embolden the officer to resist the temptation of wrong-doing to save his job.

1. Cleansing doors of perception and reckoning with reality for confidence building

(a) Politician has no space in law

Except the President or the Governor who are considered apolitical, there is no space for any functionary of political executive in law. There is hardly any law that confers any role to such a functionary like the Chief Minister or the Home Minister by such designation. Such a functionary has to work as a 'state' in accordance with law. The only expressions in law are 'police officer' or a 'magistrate'. But the political person, by virtue of his placement as a 'state' has authority to exercise powers for transfer, enquiry, sanction to prosecute, etc. Police are subject to regulation by court only in a legal manner. So it is interesting to note that a politician who creates a scare among police officers has no authority in the scheme of things to regulate functioning of police officer, unless he is a part of the executive. The only authority that has control over transfer is the head of the home ministry who can issue orders not in his capacity of a politician but as an executive head of the department. However, this political head can be influenced by his political colleagues. Therefore, transfers have to be reckoned with. This can be done by a positive attitude towards transfers. A close examination of alternatives would embolden the officer to face the 'onslaught' of transfer.

(b) The officer is a legal construct

The officer need not feel obliged to anyone for the power that he has, because he is a construct of law. All his powers flow from law. Lord Denning says, 'I hold it to be the duty of the Commissioner of Police as it is of every Chief Constable to enforce law of the land ... but...he is not the servant of anyone, save the law itself. No Minister of the Crown can tell him that he must or must not prosecute this man or that man...' (R. vs. Commissioner of Police, 1968). This realization would give officer the required confidence not only in his position but also his ability in using law. The officer must learn to stand without artificial props and not depend upon outside support of politicians. His only support flows from law that not only empowers him but also protects him from

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undue influence and unreasonable harm, in case he has conducted himself in *good faith*, for *public good*, and in *accordance with law*. The three notions must go together for a harmonious construction.

2. Rewards of transfer

There are three possibilities of transfer; transfer within the same geographical location but to a different assignment; transfer outside the present location; and kept in waiting without a job. A careful consideration of these possibilities shall disabuse the mind of fear, scare, and apprehensions.

(i) Opportunity to learn and contribute

In the first case there is no dislocation but a different job, may be low in the so-called hierarchy. There is no element of dislocation as the family is not disturbed. Only the office is different. This is the least uncomfortable position. It is here that the officer must divest his mind of the hierarchy and consider the assignment as an opportunity to learn not only the dimensions of a new job but also expand his vision into totality of functions. In this manner one gets a broader view and sees those aspects that he had missed earlier. Moreover, it provides chance to make an improvement in the new organization with fresh ideas and interpretations. Secondly, it has to be realized that all assignments are significant, have a rationale, and hence important; otherwise these shall not exist. The officer must accept the intrinsic logic of the assignment, not compare with the one he has relinquished, and find a meaning and significance in the new.

Management of prisons and reforms therein are the contribution of officers who found scope in the task. So the job that was considered unimportant is now not only accepted with relish but also sought after as a step to a higher one. Who can deny the dimensions of various aspects and complexities of the department ranging from discipline to awakened thought and practices regarding health, education, teaching trades so that the inmates become good citizens. What was earlier considered as a burden of penalizing only is now an enlightened practice of reformation. Most of the officers took it as a challenge, competed with each other to bring about innovations and change in rehabilitation and reformative technologies.

Thus every assignment is a challenge, has a wide field of undone tasks that await some one with initiative. So a confidence in importance of job is essential to accept change in position and must be considered as an aspect of opportunities. There is no assignment that has achieved perfection. There is a room for improvement and it is for 'this' officer to use his talents to bring about change.

(ii) Opportunity to widen vision

The second possibility is a transfer outside the geographical location. If the job is of the same hue and flavor, it is well and good. And if it is different, then the above argument shall hold as providing an opportunity 'to make a difference'. More than that, such a transfer even to a remote, most backward region, which is often considered as 'punishment posting', must be accepted with glee as it is an opportunity to scan the

width and breadth of the country, even within the same state, unless it is a union territory which provides different experience that is not only rich but also adds to one's wisdom. One gets an idea of the disparities in life-styles, stages of development, and the void one can fill. One is better sensitized there with a time for reflection and plan for action. A sincere officer, rather than brooding over his condition and with drawing form responsibility, can make a contribution in many ways. The personal experience of many officers suggests the richness they acquire during such postings that they keep recalling as being one-ups in their careers.

In addition, such a 'dislocation' provides an opportunity for visiting remote areas, different cultures rich in local traditions, climates, and surroundings. It is like a visit to new spots, what one should relish. It is an occasion to celebrate diversity, both in place and job. And this is at government cost. It is a trip that is free of cost. He would not otherwise have a chance to see these locales.

(iii) Opportunity to self-reflect

The third possibility, though rare, is full of potential of a different kind. It is when an officer is kept in a limbo of 'awaiting posting'. When the administration has not found out a proper slot or the authorities are adamant in extending the so-called 'torture', the officer has the option of spending time in gaining theoretical insights into work in general, the role he is capable of performing, pursuing a taste he could not during his busy assignment, or take up a new project of interest. "No job' is a time for reflection, introspection, developing interests, or embarking upon fresh ideas and areas. 'An unexamined life is not worth living', said Socrates. The fallow period would enable not only self-examination and self-realization, but also enable chiseling of personality.

3. Life worthy of a recall

A fulfilled life is worthy of recall at a later stage. In an unreasoned transfer, there are many occasions for a recall, especially the cause which one upheld that became an issue for transfer; a narrative that supports one's action in hindsight and can be cited as an example for emulation. That one did not succumb to undue pressure is an occasion for celebration. Two, one can recall the contribution one has made during his tenure to a 'difficult' place or a new job. Three, one had the chance to see new areas, interact with different set of people and deal with problems contingent upon place, issues, and assignment. Four, there would be no regret in doing what one could when in position. Five, one can take satisfaction in a principled life that did not succumb to temptation of power or self-interest.

Julio Ribeiro mentions two inspiring instances when he did not go by the whim of politicians. 'I remember a minister in the Maharashtra government demanding release of some gang lords from jail to help the Congress party in an upcoming municipal election. I was the commissioner of police and I flatly refused. I was not transferred and the minister only complained loudly that he was the minister for the state of Maharashtra, minus Mumbai city'. He also gives another example: 'In Punjab, years later, the Union

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Home Minister ... wanted me to detain Akali voters in the SGPC election so that his candidates could win. When I told him that was not my job, he was naturally disappointed but I was able to turn down an illegitimate request'. However, citing a third incident when he was DCP and asked by the chief minister to permit political party to permit attack on a political labor leader and his refusal to do so, he mentions that these instances are old, and doubts 'if I could have survived today'.

4. Satisfaction in imagining hazards of 'loyalty' and 'being committed' thus securing peaceful future

The officer who accepts transfer because he has been 'inconvenient' to the political executive must take satisfaction in imagining the wages of 'loyalty' when things go awry due to change of government that starts probes into wrong-doing or criminal action. In this event, the officer becomes a scapegoat. No boss has ever come to the rescue or accepted his responsibility of what the officer had done on his bidding. None dares to help him even though they had incentivized him to err. On the other hand, they disowned their role and suggest that the officer should have acted as per law as their senior would not have given such an obnoxious order or even a suggestion thereof. The very thought of what would have happened in case of a registration of case like disgrace, ignominy, and humiliation; the loss of job as a part of suspension, cessation of legal power; the pangs of enquiry or trial along with the expenses of facing the process are enough satisfaction of not doing the wrong at the behest of executive. The absence of all this must be considered as a reward for doing the right thing and not following the wrong trail in the hope of good or better postings at choice locations. Only the bearer knows where the shoe pinches. It is prudent to imagine such a situation and feel relaxed.

5. Shedding fear forever

Once the officer has accepted transfer he loses fear of both distance and dislocation and the prestige aspect of the assignment. It is like the dread of getting into water the first time and fearing drowning. Once the balance is obtained the swim becomes a natural flow. In this way the officer derives all the benefits of that are indicated above.

Summing up

The officer must

- not fall into trap of encounter policy or 'break the back of criminals' in order to maintain law and order
- stick to procedures that are legal and from which there is no escape
- not bother about the label of being 'out of tune with time'
- not imagine expectations and become pliable but become a rod of steel and shed the image of a bamboo reed

speak truth to authority, in writing on the file, on the basis of reason, law, rules
and regulations without picking up quarrel and embarrassing the seniors by going
public. This is the best talisman of protection against undue pressure. Let the
senior take responsibility of negating the suggestions and accept responsibility
and be accountable for the decision. This does not normally happen because it
had always been easier for seniors to work from the shoulders of juniors and
withdraw as soon as there is any indication of trouble.

Caveat

All this does not suggest, in a way, to despise and defy the political executive that heads the government. In a democracy, the politician deserves respects as he, at least figuratively, represents the people who are symbolically sovereign. The government represents the people and the political executive is supreme both as part of administration and legislation. It has full authority to indicate goals, objectives, and policy which in the case of police are security, peace, maintenance of order, dealing with crime and enforcement of law. The executive can express its desire to improve policing in areas of lacuna. It must express valid concerns over crime, criminals, and criminality in society. But it cannot prescribe means like 'breaking back of criminals' or method of encounter to deal with law and order. The ends may be prescribed; the means have to be selected by police management within framework of law, various permissibilities, and technologies to prevent or counter crime, trace criminals, establish scientific proof, and seek assistance from public, especially the witnesses, by infusing legitimate confidence in their valid cooperation. Police would be well within its rights and legal mandate to counter illegitimate pressure either by confronting the authority or by putting in writing the perspective and prescriptions from legal point of view. In such a situation, no harm, except the transfer, shall visit the officer who has made an informed choice in the matter.

Conclusion

Transfer has to be taken as a boon as the officer stands on the pedestal of values with support of truth and law. His contribution shall not go unacknowledged even if he has been transferred many times. The officer, if he cannot confront authority on the basis of Supreme Court decisions, must accept transfer and make the best of it.



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Indian Approach in Ensuring Cyber Safety of Children – An Analysis

Dr. Nagarathna. A*

Introduction:

"Children are the world's most valuable resource and its best hope for the future."

John F. Kennedy

With the upsurge in the number of children using internet technology the cybercrimes against children is also alarmingly increasing. Children today rely a lot on the internet especially on social media. Internet is also a source of information and mode of communication for all including children. However, children being vulnerable might easily fall prey to online crimes. At the same time, this technology has eased commission of crimes since it helps the offenders get in contact with children who might also win over the trust of children by using online anonymity. Thus, with the advancement of cyber technology the online sexual abuse of children is increasing worldwide thereby requiring not just comprehensive law framework but an effective implementation as well as a preventive strategy so as to ensure cyber safety of children. Children are victimised with various forms of cybercrimes including Child pornography, Child grooming, Child bullying, exposure to video games that have harmful content or effect, etc.

"Unfortunately, we ve also seen a historic rise in the distribution of child pornography, in the number of images being shared online, and in the level of violence associated with child exploitation and sexual abuse crimes. Tragically, the only place we ve seen a decrease is in the age of victims. This is – quite simply – unacceptable."

Attorney General Eric Holder Jr.

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Legal Framework

Various legal measures are adopted at international as well as national levels to address the concerns affecting the cyber safety of children. At the international level, the Optional Protocol to the Convention on the Rights of the Child on the sale of children, child prostitution and child pornography adopted by the UN General Assembly on 25th May 2000¹ requires the State Parties to "prohibit the sale of children, child prostitution and child pornography as provided for by the present Protocol." Further, the UN's Commission on Crime Prevention and Criminal Justice (CCPCJ), one of the functional commissions of the UN Economic and Social Council [ECOSOC] focuses on the growing problem of cybercrime against children. Its member States have expressed consensus on strategic approaches required to address cybercrime against children.

ECOSOC vide its resolution $2011/33^2$ on Prevention, protection and international cooperation against the use of new information technologies to abuse and/or exploit children, recalls General Assembly resolutions 55/63³ of 4 December 2000, 56/121⁴ of 19 December 2001 and 64/211⁵ of 21 December 2009 concerning combating the criminal misuse of information technologies, as well as other relevant UN resolutions and reaffirms its resolution 2004/26 of 21 July 2004 titled "International cooperation in the prevention, investigation, prosecution and punishment of fraud, the criminal misuse and falsification of identity and related crimes" and resolution 2007/20 of 26 July 2007 titled "International cooperation in the prevention, investigation, prosecution and punishment of economic fraud and identity-related crime." The resolution also expresses concern about the increasingly rapid technological advances that have created new possibilities for the criminal misuse of new information and communications technologies. It re-affirms that "children should be afforded the same protection in cyberspace as in the physical world." This resolution requires states to establish, develop and implement public policies and good practices aimed at protecting and defending the rights of the child, referring to security, privacy and intimacy in spaces created using new information and communications technologies. It urges member states to^6 :

establish, develop and implement public policies and good practices aimed at protecting and defending the rights of the child, referring to security, privacy and intimacy in spaces created using new information and communications technologies;

¹https://www.ohchr.org/EN/ProfessionalInterest/Pages/OPSCCRC.aspx. ²https://www.unodc.org/documents/commissions/CCPCJ/Crime_Resolutions/2010-2019/2011/ECOSOC/Resolution_2011-33.pdf

³https://www.itu.int/ITU-D/cyb/cybersecurity/docs/UN_resolution_55_63.pdf

⁴https://www.itu.int/ITU-D/cyb/cybersecurity/docs/UN_resolution_56_121.pdf ⁵https://undocs.org/pdf?symbol=en/A/RES/64/211

⁶ Supra 1.

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- adopt measures, including, where appropriate, legislation, designed to criminalize all aspects of the misuse of technology to commit child sexual exploitation crimes and to consider, in accordance with national and international law, appropriate measures to detect and remove known child sexual abuse images from the Internet and to facilitate the identification of those responsible for the abuse and/or the exploitation of children;
- specify the production, distribution, dissemination, voluntary receipt and possession of child sexual abuse and exploitation images, along with deliberate and repeated access to websites containing such images and viewing this type of content stored online, as a criminal offence in their legal systems;
- cooperate closely with Internet service providers, mobile telephone companies and other key actors to establish appropriate and efficient mechanisms, possibly including legislation, for the reporting of child sexual abuse images and materials to the relevant authorities, to block websites with child sexual abuse images and to cooperate with law enforcement in the investigation and prosecution of the offenders responsible;
- provide adequate resources to carry out their tasks effectively to the offices responsible for investigating and prosecuting the perpetrators of crimes committed using new information and communications technologies to violate the rights of the child;
- conduct campaigns to raise awareness among the general public of the risks of misuse of new information and communications technologies;
- promote the drafting and adoption of codes of conduct and other mechanisms of corporate social responsibility for Internet service providers, mobile telephone companies, Internet cafes and other relevant key actors;
- increase their coordination and cooperation and to exchange information regarding good practices and successful experiences in combating the use of new information and communications technologies to abuse and/or exploit children;
- ensure that mutual assistance regimes ensure the timely exchange of evidence in cases relating to the use of new information and communications technologies to abuse and/or exploit children.

Indian Law Framework – an Overview:

Indian Penal Code [IPC] regulates certain forms of cybercrimes including abuse of cyber technology for child trafficking and obscenity, online cheating, etc. In order to specifically regulate sexual offences committed against children, India enacted Protection of Children from Sexual Offences Act in 2012 [POCSO].

POCSO vide its Amendment Act of 2019⁷ broadly deals with various sexual offences committed against children including Sexual harassment, online grooming, and child pornography. Section 2 (1) (d) defines a child as "any person below the age of eighteen years." The 2019 Amendment Act for the first time defined child pornography under Section 2(da) as "any visual depiction of sexually explicit conduct involving a child which include photography, video, digital or computer-generated image indistin-

guishable from an actual child, and image created, adapted, or modified, but appear to depict a child."

According to Section 11, "A person is said to commit sexual harassment upon a child when such a person with sexual intent

- utters any word or makes any sound or gesture or exhibits any object or part of the body with intention that such work or sound
- shall be heard or such gesture or object or part of the body shall be seen by the child, or
- makes a child exhibit his body or any part of his body so as it is seen by such person or any other person, or shows any object to a child in any form or media for pornographic purposes or
- repeatedly or constantly follows or watches or contacts a child either directly or through electronic, digital or any other means, or
- threatens to use, in any form of media, a real or fabricated depiction through electronic, film or digital or any other mode, of any part of the child's body or the involvement of the child in a sexual act, or
- entices a child for pornographic purposes or gives gratification.

Sexual harassment is punished under section 12 with imprisonment of either description extending to 3 years along with fine.

Section 13 explicitly prohibits the usage of children for pornographic purposes, by stating: "Whoever uses a child in any form of media including programme or advertisement telecast by television channels or internet or any other electronic form or printed form, whether or not such programme or advertisement is intended for personal use or distribution] for the purposes of sexual gratification, which includes

- (a) Representation of the sexual organs of a child,
- (b) Usage of a child engaged in real or simulated sexual acts [with or without penetration],
- (c) The indecent or obscene representation of a child,Shall be guilty of the offence of using a child for pornographic purposes."

⁷http://prsindia.org/sites/default/files/bill_files/Protection%20of%20Children%20from%20Sexual %20Offences%20%28Amendment%29%20Act%2C%202019.pdf., last retrieved on 6th September 2019.

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This offence is punishable under Section 14 according to which, a person who uses a child or children for pornographic purposes is punishable with imprisonment of not less than 5 years along with fine, and in case of second or subsequent conviction with imprisonment of not less than 7 years with fine. Additionally, if a person uses a child or children for pornographic purposes, by directly participating in such pornographic acts and thereby commits offence referred to below:

- Section 3[offence of penetrative sexual assault] or
- Section 5 [offence of aggravated penetrative sexual assault] or
- Section 7 [offence of sexual assault] or
- Section 9 [offence of aggravated sexual assault]

He will be punished for the said offences under Section 4, Section 6, Section 8 and Section 10, respectively in addition to the punishment provided in Section 14(1).

Section 15 [2019 Act] criminalises possession of child porn material, according to which, any person who stores or possesses pornographic material in any form involving a child,

- but fails to delete or destroy or report it to the designated authority, with an intention to share or transmit child pornography, is punishable with a fine of not less than 5000 rupees and with not less than 10,000 rupees fine for second or subsequent offence.
- for transmitting or propagating or displaying or distributing in any manner at any time except for the purpose of reporting or to use it as evidence in court is punished with imprisonment of either description extending to 3 years or fine or both.
- child for commercial purpose, is punished on the first conviction with imprisonment of either description for not less than 3 years and extending to 5 years, or with fine, or with both and in case of second or subsequent conviction, with imprisonment of either description of not less than 5 years extending up to 7 years and fine.

Abetment of offences of POCSO offences is punishable under section 17 with the same punishment provided for the offence's commission. A person who attempts to commit any offence or attempts to cause an offence committed and in such an attempt, does any act towards the commission of the offence is punished under section 18 with imprisonment of either description provided for the offence, for a term which may extend to one-half of the imprisonment for life, or as the case may be, one-half of the longest term of imprisonment provided for the offence or fine or both.

Generally, when more than one law applies to a scenario it is always the special law or local law that prevails over the general law. However POCSO under Section 42 states: "Where an act or omission constitutes an offence punishable under this Act and also under Section 166A, 354A, 354B, 354C, 354D, 370A, 375, 376A, 376A, 376AB, 376B, 376C, 376D, 376DA, 376DB, 376E or section 509 of the IPC or Section 67B of the Information Technology Act, 2000 then, notwithstanding anything contained in any
law for the time being in force, the offender found guilty of such offence shall be liable to punishment under this Act or under the IPC as provides for punishment which is greater in degree." Additionally, Section 42A clarifies that POCSO Act will be in addition to and not in derogation of the provisions of any other law and in case of any inconsistency, POCSO will have overriding effect on such other law to the extent of such inconsistency.

According to Section 45 the Central Government may, by notification in the official gazette, make rules for carrying out the purposes of this Act. It can make rules under Section

- 45(2) (a) relating to the manner of deleting or destroying or reporting about pornographic material in any form involving a child to the designated authority under Section 15(1).
- Section 45(2) (aa) relating to the manner of reporting about pornographic material in any form involving a child under Section 15(2)."

In order to specifically deal with cybercrimes, the Indian Information Technology Act [IT Act] was amended in 2008 through which various provisions relating to cybercrimes were added. Section 67B criminalises child pornography at various stages of its commission, such as:

- Publication and transmission in any electronic form which depicts children engaged in sexually explicit act or conduct
- Creating and collecting text or digital images or browsing, downloading, advertising, promoting, exchanging or distributing material in any electronic form depicting children in obscene or indecent or sexually explicit manner,
- cultivating, enticing or inducing children to online relationship with one or more children for and on sexually explicit act or in a manner that may offend a reasonable adult on the computer resource;
- facilitating abusing children online, or
- recording in any electronic form one's own or other abuse pertaining to sexually explicit act with children.

This offence is punishable on first conviction with imprisonment of either description for a term extending to 5 years with fine up to 10,000 rupees.

The second or subsequent conviction is punishable with imprisonment of either description for a term extending to 7 years with fine up to 10 lakh rupees.

While child sex trafficking is not a new crime, the use of technology to facilitate this crime is⁸. With the growth of Internet usage, a child's risk of being targeted increases, "technology has lowered the bar of entry to the criminal world, which has had an expansive effect on the growth of modern slavery... Our challenge is that technology is

⁸ International Centre for Missing and Exploited Children, Studies in Child Protection: Technology Facilitated Child Sex Trafficking, November 2018, available at https://www.icmec.org/wp-content/uploads/2018/12/Technology-Facilitated-Child-Sex-Trafficking_final_11-30-18.pdf, last accessed on 26th August 2019.

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taking slavery into a darker corner of the world where law enforcement techniques and capabilities are not as strong as they are offline."⁹ Instead of lurking in shopping malls and parks, predators who befriend and sell children for sex now hang out on social networks like Facebook and gaming sites.¹⁰ According to the US based International Centre for Missing and Exploited Children, "often grooming children for sexual abuse as a first step to enslaving them."¹¹ It is hence important to recognise the connectivity between online grooming or other ways of seducing children that might later lead to immoral traffic. To an extent Section 366A, IPC can be used as it deals with inducing a minor girl to go from any place or to do any act with the intent that such girl may be or is likely to be forced or seduced to illicit intercourse with another person.

The Immoral Traffic (Prevention) Act of 1965, a law that criminalises the act of "procuring or attempting to procure a person for the purpose of prostitution" criminalises acts of inducing a person to go from one place to another with the intent that such person may be used for the purpose of prostitution but does not expressly cover online platform beings used for such acts of trafficking. However, the Act defines a child as a person who has not completed the age of 16 years and this is contrary to both the IT Act and POCSO. The Ministry of Women and Child Development has proposed an amendment to this provision to increase the age of child to "a person under the age of 18 years".¹²

This Act also requires a relook so as to address concerns raised due to the online platforms abuse leading to the immoral trafficking of children. It is essential to note that today minor girls can be contacted and approached online for committing such acts of "procuring" and "inducing". Strategies to address technology-facilitated child sex trafficking must address the misuse of ICTs to facilitate it and harness the potential of ICTs to combat it.¹³

Liability of Intermediaries:

Often social media platforms and websites are used to commit offences against children. They are used to create, transmit and other deal with abusive online contents. Hence the

⁹ Ibid, quoting Kieran Guilbert, Technology a double-edged sword for human traffickers: Europol head, REUTERS, Apr. 26, 2018, at https://www.reuters.com/article/us-europe-slaveryinterview/technology-a-double-edged-sword-for-human-traffickerseuropolheadidUSKBN1HX2MB, last visited Oct. 5, 2018.

¹⁰ Anastasia Moloney, Grooming Is Gateway To Child Sex Trafficking As 'Seducing' Moves Online, Https://Www.Reuters.Com/Article/Us-Global-Trafficking-Technology-Youth/Grooming-Is-Gateway-To-Child-Sex-Trafficking-As-Seducing-Moves-Online-Iduskbn1jd00i., Last

Accessed On 28th August 2019.

¹¹ Ibid

¹² https://wcd.nic.in/act/amendment-proposed-immoral-traffic-prevention-act-1956, last accessed on 28th August 2019.

¹³ Supra 8, quoting the Vienna Forum to Fight Human Trafficking, Austria Centre Vienna Background Paper, Workshop: Profiling the Traffickers, United Nations Global Initiative to Fight Human Trafficking (UN.GIFT), at

https://www.unodc.org/documents/humantrafficking/2008/BP016ProfilingtheTraffickers.pdf, last visited Oct. 5, 2018.

need to impose legal liability upon internet intermediaries. Section 2(w) defines an "Intermediary" with respect to any particular electronic records, as any person who on behalf of another receives, stores or transmits that record or provides any service with respect to that record and includes telecom service providers, network service providers, internet service providers, web hosting service providers, search engines, online payment sites, online-auction sites, online market places and cyber cafés. Section 79 exempts the liability of an Intermediary in certain cases upon fulfilment of certain conditions. According to the section an intermediary is not liable for any third party information, data, or communication link hosted by him if his function is limited only to provide access to a communication system over which information made available by third parties is transmitted or temporarily stored; or if he does not select or modify the information contained in the transmission. He is required to observe due diligence while discharging his duties under this Act and other guidelines prescribed by the Central Government. This immunity will not be granted if an intermediary has

- conspired or abetted or aided or induced whether by threats or promise or otherwise in the commission of the unlawful act, or upon receiving actual knowledge,
- on being notified by the appropriate Government or its agency that any information, data or communication link residing in or connected to a computer resource controlled by the intermediary is being used to commit the unlawful act, he fails to expeditiously remove or disable access to that material on that resource, however without vitiating the evidence in any manner.

Hence to grant immunity to an intermediary under this provision it must be proved that such intermediary has complied with the following conditions:

- an intermediary should limit his function to provide access to a communication system over which information made available by third parties is only transmitted or temporarily stored. He should not initiate such transmission, select the receiver of such transmission and select or modify the information contained in such transmission.
- An Intermediary must adhere to 'Due diligence' which further requires him to take immediate action in case of receipt of information about the misuse of his online platform. Such action can involve immediate removal of illegal content and blocking access to the concerned site or providing assistance for blocking of sites when required by Government.

In the Bazee.com case¹⁴, an internet website carried a listing which offered for sale a video clip, shot on a mobile phone, of two children of a school in Delhi

¹⁴ Avnish Bajaj v. State of Delhi, 150 (2008) DLT 279

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indulging in an explicitly sexual act. The Petitioner, Avnish Bajaj was the MD of Baazee.com India Private Limited [BIPL], a wholly owned subsidiary of Ebay Inc. USA, and the owner of the website http://www.baazee.com filed this case asked the Court to annul his criminal prosecution for the offences of making available for sale and causing to be published an obscene product within the meaning of Section 292 IPC Section 67 of the IT Act. In this case, the Delhi High Court had held that the ISP had failed to exercise due diligence as it failed to provide efficient filters to screen pornographic contents and also failed to introduce operative or policy changes to prevent the listing /display/sale of the same on the portal.

3. An intermediary if has no knowledge of the illegal contents being stored and passed through his servers will be exempted from legal liability provided such wrongs are committed by third parties or users. As soon as an ISP gets to know about such illegal content been stored or passed through his service, he must take necessary steps immediately such as removing or deleting such content form their servers and notifying law enforcement authorities.

According to Section 79(3) immunity will not be granted to an intermediary if he has conspired or abetted or aided or induced whether by threats or promise or otherwise in the commission of the unlawful act and if he, upon receiving actual knowledge, or on being notified by the appropriate Government or its agency that any information, data or communication link residing in or connected to a computer resource controlled by him is being used to commit the unlawful act; fails to expeditiously remove or disable access to that material on that resource without vitiating the evidence in any manner.

Even though provisions of other laws such as IPC, Copyright Act, etc. can be extended to impose liability upon ISPs, yet due to Section 81 of the IT Act, which has an overriding effect, it is not possible. According to Section 81 "the provisions of this Act shall have effect notwithstanding anything inconsistent therewith contained in any other law for the time being in force." Thus the provisions of the [IT] Act will preview notwithstanding anything inconsistent therewith contained in any other law for the time being in force. (Justice Yatindra Singh, 2007, pp. 293).

The Information Technology [Intermediaries Guidelines] Rules requires an intermediary to comply with 'due diligence' requiring while discharging their duties including by way of regulating online contents that is grossly harmful, harassing, obscene, pornographic, pedophilic or otherwise unlawful in any manner, that which harm minors in any way, violates any law for the time being in force or which causes incitement to the commission of any cognizable offence or prevents investigation of any offence. The amendments suggested to the rules in 2018¹⁵ requires an intermediary to provide such information or assistance as asked for by any government agency or assistance concerning security of the State of cyber security or investigation or detection

¹⁵https://meity.gov.in/writereaddata/files/Draft_Intermediary_Amendment_24122018.pdf., last accessed on 15th September 2019.

or prosecution or prevention of offences, protective or cyber security and matters connected with or incidental thereto within 72 hours of communication when such compliance is required though a lawful order.¹⁶ An intermediary who has more than fifty lakh users in India or is in the list of intermediaries specifically notified by the Government of India will be considered as a 'company' according to this proposed amendment. Such company will be required to have a permanent registered office in India with physical address and to also appoint a nodal person of contact and alternate senior designated functionary in India, for 24x7 coordination with law enforcement agencies and officers so as to ensure compliance to their orders or requisition made in accordance with provisions of law or rules.¹⁷ The proposed amendment to the rules also require an intermediary, upon receiving actual knowledge in the form of a court order, or on being notified by the appropriate Government or its agency under section 79(3)(b) of Act, to remove or disable access to that unlawful acts relatable to Article 19(2) of the Constitution of India such as: - in the interests of the sovereignty and integrity of India; the security of the State; friendly relations with foreign States; public order; decency or morality or in relation to contempt of court, defamation or incitement to an offence, on its computer resource without vitiating the evidence in any manner, as far as possible immediately, but in no case later than 24 hours.¹⁸ The proposed rule also requires an intermediary to preserve such information and associated records for at least 180 days for investigation purposes, or for such longer period as may be required by the court or by government agencies who are lawfully authorised¹⁹ and to deploy technology based automated tools or appropriate mechanisms, with appropriate controls, for proactively identifying and removing or disabling public access to unlawful information or content.²⁰

In a recent PIL, Re Prajwala Letter dated 18.2.2015²¹ the Supreme Court looked into the issue of liability of Intermediaries in respect to online abuse of children. The court directed the Government and internet intermediaries including Facebook, Whatsapp, Google, Microsoft, etc., to "remove the videos of rape, gang rape and child pornography from the internet."22 This PIL was Suo-moto taken up by the Supreme Court of India based on a letter sent by Prajwala, a NGO, based on which the court constituted a committee to assist and advise the court in regulating online sexual abuse of children. Based on the recommendations of the Committee the SC had issued the above directions.

¹⁶ Proposed Rule 5.

¹⁷ Proposed Rule 7

¹⁸ Proposed Rule 8 ¹⁹ Ibid

²⁰ Proposed Rule 9

²¹ SMW (Crl.) No (S). 3/2015 available at

https://sci.gov.in/supremecourt/2015/6818/6818_2015_Order_22-Oct-2018.pdf., accessed on 15th September 2019.

²² Alabhya Dhamija, SC directs Govt, Facebook, WhatsApp, Google to remove child porn, rape videos, https://tilakmarg.com/news/sc-directs-govt-facebook-whatsapp-google-to-removechild-porn-rape-videos/.. accessed on 15th September 2019.

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Legal Procedural Aspects:

Offences mentioned above from both POCSO and IT Act are cognizable in nature and hence must be investigated by investigating agencies. According to Section 19 of POCSO, "any person including the child who has apprehension that an offence under this [POCSO] Act is likely to be committed or has knowledge that such an offence has been committed, he shall provide such information to

- a) the Special Juvenile Police Unit, or
- b) the local police

This report shall be the basis to register a FIR, based on which investigation begins. POCSO through Section 21 imposes criminal liability on the person who despite being aware of the fact that a crime committed under the Act fails to report such matters with the appropriate authority. In case of an offence under investigation under IT Act, the Act requires that such investigation is conducted only by an officer not below the rank of an Inspector, as Section 78 and 80 insists for the same. Unlike other conventional crimes, the burden to prove guilt of an accused even though is on the prosecution, yet section 29 of POCSO to an extent reduces this burden by way of providing presumption of certain offences, such as – offence under Section 3,5, 7 and 9 of the Act. Section 30 further states that "in any prosecution for any offence under this Act which requires a culpable mental state on the part of the accused, the Special Court shall presume the existence of such mental state with respect to the act charges as an offence in that prosecution." The IT Act 2000 also makes the offence of child pornography cognizable, non-compoundable and non-bailable.

Additional Remedies:

E Surveillance: According to Section 69(1) of the IT Act, read with rule 4 of the Information Technology (Procedure and Safeguards for Interception, Monitoring and Decryption of Information) Rules, 2009, the Competent Authority has authorised the following Security and Intelligence Agencies for the purposes of interception, monitoring and decryption of any information generated, transmitted, received or stored in any computer resource under the said Act:

- 1. Intelligence bureau
- 2. National Investigation Agency (NIA),
- 3. Enforcement Directorate (ED),
- 4. Central Bureau of Investigation (CBI),
- 5. Narcotics Control Board,
- 6. Central Board of Direct Taxes,
- 7. Directorate of Revenue Intelligence,

- 8. Cabinet Secretary (RAW),
- 9. Directorate of Signal Intelligence (for service areas of Jammu and Kashmir, Northeast and Assam only) and
- 10. Commissioner of Police, Delhi.

This power of surveillance can be used if it is necessary or expedient to do so "for investigation of any offence."

Content blocking: In case of any abusive content online, law provides for blocking of such websites or for removal of such contents from internet pages. The Central Government in 2003 issued an advisory prescribing the procedure for blocking of websites. According to the circular, CERT-IND is the authority empowered to issue instructions in the context of blocking of websites. It, after verifying the authenticity of the complaint and after satisfying that action of blocking of website is absolutely essential, shall instruct Department of Telecommunications (DOT) - (LR Cell) to block the website. DOT, under whose control the Internet Service Providers (ISPs) are functioning will ensure the blocking of websites and inform CERT-IND accordingly.²³

The Cyber Crime Prevention against Women and Children [CCPWC] Scheme²⁴ of the Ministry of Home Affairs aims to provide an effective mechanism to handle cybercrimes against women and children in the country.²⁵Recently the National Crime Records Bureau [NCRB] has been designed as the Central Nodal Agency under Cyber Crime Prevention against Women and Children [CCPWC] Scheme wide order by Ministry of Home Affairs dated 25th June 2018.²⁶ The Bureau is entrusted with duty to manage technical and operational functions of the online cybercrime reporting portal and associated work of CCPWC scheme. The cybercrime reporting portal are maintained on NCRB²⁷ and Ministry of Home Affairs.²⁸

In September 2018, the government launched for the first time in the country an online National Database on Sexual Offenders that NDSO that will have details of the convicts of offences of rape, gang rape and offences under POCSO and stalking. The database maintained by NCRB will have the details of convicts' name, address, photograph and fingerprint. These data are accessible only to law enforcement agencies.²⁹ In order to

²³https://meity.gov.in/writereaddata/files/Information%20Technology%20%28%20Procedure%2 Oand%20safeguards%20for%20blocking%20for%20access%20of%20information%20by%20 public%29%20Rules%2C%202009.pdf

²⁴https://mha.gov.in/division_of_mha/cyber-and-information-security-cis-division/Details-about-CCPWC-CybercrimePrevention-against-Women-and-Children-Scheme., last accessed on 29th August 2019.

²⁵https://pib.gov.in/Pressreleaseshare.aspx?PRID=1559115., last accessed on 29th August 2019.

²⁶ Order available at http://ncrb.gov.in/

²⁷https://cybercrime.gov.in/cybercitizen/home.htm

²⁸https://digitalpolice.gov.in/

²⁹ Govt launches online database of sex offenders, September 20, 2018, available on https://www.hindustantimes.com/india-news/govt-launches-online-database-of-sexoffenders/story-pcSDCfrAQNOT9jFjwINRSN.html., last visited on 15th September 2019.

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prevent abuse video games usage by children the government has come up with its own game application for children which is called as the 'cyber trivia' app³⁰.

Conclusion:

"It is easier to build strong children than to repair broken men."

- Frederick Dougless.

Since internet technology today is connecting the crimes committed over cyber space to physical space, thereby converting at times 'content crimes' into 'contact crimes' it is important for the law to recognise this aspect and accordingly regulate the same. Often the invisibility, anonymity and privacy conferred to perpetrators of wrong is misused to commit crimes on line and State should take note of this fact and come up with a suitable measure. Children often easily fall prey to cybercrimes as they can be easily lured. Hence law should adopt preventive measure in addition to punitive. It is thus important to adopt a more comprehensive approach to regulate cybercrimes against children so as to ensure cyber safety of children.

References

- Alabhya Dhamija, SC directs Govt, Facebook, WhatsApp, Google to remove child porn, rape videos, https://tilakmarg.com/news/sc-directs-govt-facebook-whatsapp-google-to-remove-child-porn-rape-videos/
- Anastasia Moloney, Grooming is gateway to child sex trafficking as 'seducing' moves online,https://www.reuters.com/article/us-global-trafficking-technologyyouth/grooming-is-gateway-to-child-sex-trafficking-as-seducing-moves-online-

idUSKBN1JD00I.

- Government develops game to counter cybercrime against children: NCPCR, September 2018, https://economictimes.indiatimes.com/tech/internet/government-develops-game-to-counter-cyber-crimes-against-children-ncpcr/articleshow/65920787.cms?from=mdr.
- Govt launches online database of sex offenders, September 20, 2018, https://www.hindustantimes.com/india-news/govt-launches-online-database-of-sex-offenders/story-pcSDCfrAQNOT9jFjwINRSN.html.

http://ncrb.gov.in/

http://prsindia.org/sites/default/files/bill_files/Protection%20of%20Children%20from%2 0Sexual%20Offences%20%28Amendment%29%20Act%2C%202019.pdf.

https://cybercrime.gov.in/cybercitizen/home.htm https://digitalpolice.gov.in/

³⁰ Government develops game to counter cybercrime against children: NCPCR, September 2018, available on https://economictimes.indiatimes.com/tech/internet/government-develops-game-to-counter-cyber-crimes-against-children-ncpcr/articleshow/65920787.cms?from=mdr., last accessed on 29th August 2019.

https://meity.gov.in/writereaddata/files/Draft_Intermediary_Amendment_24122018.pdf. https://meity.gov.in/writereaddata/files/Information%20Technology%20%28%20Proced ure%20and%20safeguards%20for%20blocking%20for%20access%20of%20infor

mation%20by%20public%29%20Rules%2C%202009.pdf

https://mha.gov.in/division_of_mha/cyber-and-information-security-cis-division/Detailsabout-CCPWC-CybercrimePrevention-against-Women-and-Children-Scheme.

https://pib.gov.in/Pressreleaseshare.aspx?PRID=1559115.

https://sci.gov.in/supremecourt/2015/6818/6818_2015_Order_22-Oct-2018.pdf. https://undocs.org/pdf?symbol=en/A/RES/64/211

https://wcd.nic.in/act/amendment-proposed-immoral-traffic-prevention-act-1956.

https://www.icmec.org/wp-content/uploads/2018/12/Technology-Facilitated-Child-Sex-Trafficking final 11-30-18.pdf.

https://www.itu.int/ITU-D/cyb/cybersecurity/docs/UN_resolution_55_63.pdf https://www.itu.int/ITU-D/cyb/cybersecurity/docs/UN_resolution_56_121.pdf

International Centre for Missing and Exploited Children, Studies in Child Protection: Technology Facilitated Child Sex Trafficking, November 2018,

https://www.icmec.org/wp-content/uploads/2018/12/Technology-Facilitated-Child-Sex-Trafficking_final_11-30-18.pdf.

Justice Yatindra Singh, (2007), Cyber Laws, Universal Law Publishing Co., 3rd Edition.



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Changing Contours of Cybersecurity: Challenges, Response and Preparedness

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ABSTRACT

The modern age is driven by internet-based technologies and digitized innovations, which have percolated rapidly among institutions and individuals. An increasing dependence on virtual interactions has translated to unprecedented risks for organizations across public and private sectors, in terms of operational continuity, information integrity, privacy, and financial processes. Cybersecurity has thus become almost synonymous with securing human entrepreneurship. This paper highlights various contemporary issues in cybersecurity which pose technological, operational, legal and ethical challenges. Cyber-incidents can be local, national, trans-national or global – with ramifications for business, economy, society, law and order, defense and politics. Since cybercriminals target their victims for acutely specific purposes, it is difficult to develop one-solution-fits-all responses that are exhaustively enumerable. This paper systematically outlines the roadblocks faced by major stakeholders of cybergovernance, with the objective to evolve an interdisciplinary and internationallypartnered roadmap of preparedness to counter the growing clout of cyberattacks. It is recommended that cybersecurity preparedness be based on principles of (a) collaboration and co-ordination, (b) legislation and regulation, (c) capacity-building, (d) prediction and prevention, and (e) strategic interventions and sustainability of efforts. The recommendations are both tactical and strategic, and will hopefully encourage further discussions on digital policy and cyberspace law enforcement in India.

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KEYWORDS:

Cybersecurity, cybercrime, cyberattack, cyber warfare, cyber resilience, social media, data breach, e-governance, hacking, malware, spyware, ransomware, espionage, cloud storage, Artificial Intelligence, Internet-of-Things, internet policy, digital law enforcement, digital policing, blockchain, cryptocurrency, darknets, organized crime, incident response, preparedness

Introduction

Our society has leapfrogged from the benign age of prohibitively expensive computer hardware and esoteric software that catered to the educated elite, to a cyber boom where technology has democratized. The easy availability of affordable high-end smartphones and reliable 4G mobile Internet have taken internet service delivery and consumption to the next level. A strong corporate drive across industries has made e-commerce, appbased banking, digital wallets, social media and Artificial Intelligence (AI) decisionmaking very popular. Moreover, within organizations, including those in the public services domain, e-governance and e-service platforms are increasingly being adopted. Despite variations in technology absorption, no organization's processes and culture can escape the connectedness provided by the ubiquitous Internet, or ignore the convergence facilitated by its technological assets. It would thus not be an exaggeration to say that all present-day organizations are digital by default.

Every innovation that advances the society also attracts its fair share of deviants. The cyber domain is no exception, as indicated by the exponential rise in the number of cyberattacks targeting public and private organizations – and, of late, individuals. The internet architecture, such as Tor browsers, open access Wi-Fi points, Bluetooth tethering, VPNs, privacy policies of Internet Service Providers, encourages anonymity and empowers lawbreakers to coordinate nefarious activities at an unprecedented scale. Cybercriminals may resort to different forms of attacks, including but not limited to extortion, data breaches, denial-of-service, impersonation of government agencies, and defamation. Growing medium-income economies like India, with their large populations and fast uptake of digitalization, are especially at risk from such cyberattackers. While no single government or institution can claim monopoly over the cyberspace, the ability to produce a timely and effective cybersecurity response is seen as a symbol of good governance.

The Digital Age and Cybersecurity

The World Economic Forum, in its Global Risks Report 2019, has presciently listed 'Data fraud or theft' and 'Large-scale breaches of cybersecurity' as the 4th and 5th most likely risks, and 'Cyberattacks' and 'Critical information infrastructure breakdown' as the 7th and 8th highest risks in terms of impact (World Economic Forum, 2019). The

same report mentioned that the largest cyber-breach of 2018 occurred in India in the Aadhar database hack which potentially compromised the records of 1.1. billion persons. The annual global cost of cybercrime damages is estimated to reach US\$ 6 trillion by 2021, twice the 2015 annual cost of US\$ 3 trillion (Morgan, 2018).

In a survey report published in February 2019 by consumer tech review firm Comparitech, India ranked the 15th worst among 60 countries in terms of cybersecurity, as about 25.3% of Indian mobile devices and about 21.8% of desktops were found infected with malware (Bhattacharya, 2019). Japan was declared the most cyber-secure, while Algeria was the worst.

Social Media: Open but Exposed

Social Media (SM) has rendered the traditional laws of libel, slander, theft and defamation inadequate. Harmful content, hate speech, disinformation, fake news, morphed photos and videos, and political conspiracy theories on SM are beyond the resolving capabilities of multinational platform providers like YouTube, Facebook, Twitter or Instagram – because billions of active users are uploading content each day on platforms with meager restrictions, firewalls or containment strategies. SM platforms derive revenues by sharing user metadata and browsing history with business partners for further behaviour modification and micro-targeting. Expectedly, they lobby hard to insulate their data sharing practices from regulation.

Beyond digital damage, social media is increasingly playing a role in instigating mob violence, hate crimes and radicalisation, with the online messages culminating in offline illegal actions. The Facebook Live streaming – and subsequent viral sharing – of the 15-Mar-2019 Christchurch mosque massacre of 51 people, prompted 17 countries, including India, the European Commission and 8 online service providers, on 15-May-2019, to sign a document called 'Christchurch Call to Action' to prevent violent social media content and combat online extremism (New Zealand Ministry of Foreign Affairs & Trade, 2019).

Software that is used to fight terrorism and serious crimes can also be abused against human rights activists, journalists, and dissidents who challenge the state. In May 2019, WhatsApp reported that the commercial Israeli spyware Pegasus, used by over 45 state intelligence agencies, had exploited a vulnerability in its phone call application to covertly copy a target smartphone's texts, contacts, GPS location, email and browser history, and activate the phone's microphone and camera for surveillance. In July 2019, Pegasus has allegedly compromised security controls of renowned cloud storage services like Google Drive and iCloud (Field, Chowdhury & Sanchez, 2019).

Weak Systems, Vulnerable Institutions

Hackers use phishing which, simply put, is deception to impersonate the human behaviour. Unsurprisingly, the lack of human understanding of cybersecurity is the biggest contributor of data breaches. Disgruntled or malicious employees, students or contractors, with access to institutional systems can find bad actors on darknets to express their latent criminality. The sophistication of cyberattacks will increase as bespoke phishing campaigns and AI algorithms mimic the behaviours of key system users, prioritise targets, and create personalised deception techniques. Future cyberattacks are expected to be less random. Surveys have found that organizations which experience breach incidents once are likely to become victims again in the same year (Rizkallah, 2018). It shows that victims, instead of revamping security controls and cybersecurity teams holistically, are likely fixing the extant problem only – possibly due to budget constraints.

Many organizations still do not have a Computer Security Incident Response Plan (CSIRP) that is applied consistently across the entire enterprise (Help Net Security, 2019). Those with a plan do not test it regularly, or at all. While CSIRPs in most organizations are reactive, cyberattacks are stealthy, targeted and data-focused. Significantly, about 9% of organizations do not realize they have been compromised for months (Greig, 2018), and incur significant damage by the time they do. Unfortunately, most breaches get flagged by a third party, e.g. a client or law enforcement agency (LEA).

Once information of a cyberattack on a reputed stock exchange listed firm is made public, it is common to see its share price drop temporarily for 2-3 days (Bianchi & Tosun, 2019), as investors fear loss of competitiveness due to leakage of proprietary information, litigation and regulatory sanctions due to improper security controls, and loss of business during system downtime. As cybercriminals grow bolder and more organized, they may release information of security breaches to make windfall profits by a combination of cyberattack and short-selling of the victim's shares.

Who should be responsible for cybersecurity? This question tends to evoke a 'specialist-generalist' dilemma among senior executives. A survey of about 450 global companies found that responses range from the Board of Directors (40%), a specialized cyber committee operating under a Chief Technology Officer (24%), audit, risk or some other subgroup (Ismail, 2018). This disparity has resulted in a lack of ownership and delivery on cybersecurity improvements beyond the IT department. Often the threat is not the cyber-adversary, but the lack of internal support, early warnings being ignored, and sparse communication among leaders on the financial, workforce, reputational or personal consequences of cyber-threats.

Most organizations face a shortage of experienced and skilled cybersecurity personnel. This human resource gap is being bridged by training the existing IT personnel in short courses, mainly on data security, such as information handling, transportation, encryption, storage, and network firewalls. The more technically oriented tasks for building cyber resilience, like penetration testing or website DDOS risk mitigation, and recovery from attacks are routinely outsourced, often post-incident.

Conventional anti-malware products, which rely on previously seen signatures to detect malicious code and require frequent updating of signature databases, are ineffective against unknown malware (aka zero-day malware). Sandboxing techniques can create multiple layers within the same network, and use the first-level infection to create real-time malware signatures (Cloonan, 2017). However, they offer protection only to the pre-defined inner levels. Comprehensive protection, whereby malware is identified before it executes, is achievable by using AI-based approaches like machine learning and statistical models to calculate the risk of any executable code.

Threats to Global Economy and National Interests

Instances of state-backed cyberattacks are increasing. These include the USA's 2010 Stuxnet attack on Iran's nuclear centrifuges, Russia's 2015 takedown of Ukraine's power grid and its hacking of the Democratic Party's emails in the 2016 US Presidential election campaign, China's intellectual property thefts, and North Korea's attack on Sony Pictures over the film 'The Interview'. State-backed cyber-operations become extremely complex when the target is to secure political or diplomatic gains. There are no rules of engagement. Attributing any attack to a sovereign entity requires abundant evidence, and responding with a diplomatic protest or proportionate like-for-like cyberattack.

On 14-June-2015, the North Atlantic Treaty Organization (NATO) had proclaimed 'cyber' as an official warfare domain, next to air, sea and land, thereby implying that cyberattacks on any NATO member could trigger a collective military response from all (Cimpanu, 2016). Interestingly, in May 2019, the Israeli Defence Forces, citing a Hamas cyberattack against Israel's cyberspace, bombed a building allegedly housing hackers, in the first ever instance of a military retaliation to a cyberattack (Groll, 2019).

The dilemma of cyber-deterrence is that cyber-weapons cannot be displayed during ceremonial parades like conventional military hardware, and need to be treated more like intelligence assets. A responsible sovereign state should not allow cyberattacks to be committed by any private entity. Retaliatory cyber-action in the private sector can be effective only with the collaboration of LEAs, who can better analyze the legal and ethical consequences of acquiring hacking tools or engaging hackers, dealing with 'what-if' scenarios arising out of any incorrect attribution of the attack, or underestimation of the perpetrator's proficiency which may result in escalation and further self-harm. The irony is that LEAs do not share real-time intelligence or provide direct access to LEA systems to any private agency, irrespective of the technological or financial prowess of the non-governmental entity. This form of quasi-reciprocal engagement might lead to feelings of frustration and firction between a tech-savvy private partner and a confidentiality-bound public entity.

Concerned with the espionage and sabotage threats posed by Chinese suppliers of telecom infrastructure, particularly in future 5G networks, the US President, on 15-May-

2019, issued a ban on the technology and services of foreign adversaries deemed to pose unacceptable risks to national security. Australia, New Zealand and Japan have introduced similar bans. Consequently, most leading US tech giants like Google, Microsoft, Intel, etc. have severed ties with the Chinese device manufacturers Huawei and ZTE (Segal, 2019). Nearly 80% of the commercial drones – used increasingly by organizations in monitoring activities like infrastructure inspection, crop yield monitoring, aerial photography, post-disaster search-and-rescue and damage assessment – are Chinese made (Shortell, 2019). The glut of Chinese manufactured mobiles and, to a lesser extent, drones in India raises similar concerns about in-built backdoors.

The lack of an indigenous electronics hardware industry would compel India to tradeoff its cyber-espionage concerns vis-à-vis the imperative to expand digital footprint among masses using available, inexpensive foreign equipment. India's impressive growth in smartphone usage, pushed by the "Digital India" government initiative, has prompted hackers to design Trojans that infiltrate smartphones via links on streaming multimedia or download websites. The PCs, commonly used in government offices and middle-class households, are vulnerable to hacking, due to unlicensed operating systems and outdated anti-virus, an affinity to download free pirated content, and a general lack of browsing discipline.

On 01-May-2019, the Russian President signed a 'sovereign internet' law, which requires Internet Service Providers to install Deep Packet Inspection devices for all Internet traffic, making it possible to monitor, prioritize the speed of or block content, especially on SM and opinion articles antagonistic to Russian interests. In a threat scenario, the state telecom regulator is empowered to switch off the 'national' Internet from the global Internet (Ninan, 2019). Interestingly, China, North Korea and Iran, the other global rivals of the West, also operate quarantined Internet systems in varying degrees. Such form of cyber-governance clearly indicates that differences in cyber-threat perception will lead to divergence in cyber laws from one nation to another – it goes against the dominant narrative of development through online convergence. Internet fragmentation is unimaginable in India, as our citizens are densely integrated into the global Internet, international finance and digital ecosystem. Even a partial cut-off could be economically adverse and spark unrest.

The term 'bitcoin' figures prominently in the global economic narrative as an alternative asset, a cryptocurrency which may hedge investors from negative market swings in the ongoing US-China trade conflict and currency wars (Kim, 2019). Monetization of blockchain technology has challenged traditional fiat money. Yet, cryptocurrency has become infamously linked to ransomware, one of the most recurring type of attacks in data-intensive settings. Ransomware may cripple online billing systems, payroll records, utilities service requests, stock data, and even delay treatment of patients whose electronic records cannot be retrieved (Davis, 2018).

In May 2017, the 'WannaCry' ransomware encrypted files in over 300,000 computers across 150 countries, running the Microsoft Windows operating system (Rodriguez,

2017). The attackers demanded ransom of US\$300 within 3 days and provided victims 3 bitcoin wallet addresses, whose transactions and balances were publicly accessible. Despite worldwide outrage, Microsoft security patches, and coordinated investigation by LEAs and private cybersecurity agencies, the wallets received 348 payments totaling 52.196 bitcoins, roughly US\$143,730. On 03-Aug-2017, in 5 transactions, the entire balance was withdrawn. The ransom was likely shifted into a large volume of payments that obscured its final destination, akin to money laundering. The bitcoins were reportedly converted into Monero, a more privacy-oriented cryptocurrency that is popular in darknets.

Russia, Ukraine, India and Taiwan were the most seriously affected countries. The Indian entities included the Union Ministry of Corporate Affairs' MCA21 e-filings portal, the Gujarat State WAN, the West Bengal State Electricity Distribution Company, the Southern Railways' Palakkad division, the Tirupati temple's IT systems, the Andhra Pradesh Secretariat, and the police departments in Andhra Pradesh and Maharashtra (Singal, 2017).

Compared to the initial panic, the amount of ransom extracted was paltry. That the perpetrators were not profit-driven but politically motivated became clear in the real impact – loss of productivity and trust, lost customers, cost of data restoration and integrity analyses, regulatory fines, political embarrassment, and an overall shared feeling of helplessness, by government concerns, vital installations, banks, utilities, and corporations worldwide.

Challenges for Systems and Law Enforcement

Law does not prohibit ransom payment. Yet, repeat ransomware attacks signify a failure of the current legal system. Local LEAs lack the resources to solve cybercrimes, while central agencies often impose a threshold condition for taking over an investigation. Victims rarely report attacks, as they are reluctant to acknowledge their system lapses, fear losing clients, and know that the probability of detection is low. Although the average ransom sought is often within the victim's financial capacity, the moral quandary persists – whether ransom payment encourages online extortion. Since many victims are government-funded or public agencies, the apprehension that taxpayer money may end up with hostile nations, terrorists, in darknets and organized crime is too real to ignore.

Victims having a no-ransom policy employ specialist companies, who profess to use the latest technologies and proprietary data recovery methods to unlock systems. Since most ransomware encryptions are practically unbreakable within the ransom deadline, these so-called specialists might actually be paying the cyberattackers to obtain decryption keys without their client's knowledge, or even worse, conspiring with the perpetrators themselves (Dudley & Kao, 2019).

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Non-state cybercriminals are becoming smarter, more organized and commercialized, as indicated by instances of India-based call centre scams masquerading as tax or immigration officials or loan brokers (Louis, 2019), romance scamsters also offering victims counseling services (Grimes, 2018) or using targets as 'money mules' for money laundering (Foltyn, 2019), or darknet vendors (e.g. Silk Road, AlphaBay, Hansa) emulating mainstream e-commerce business models in providing courier services. On 23-Apr-2019, the German police shut down the 'Wall Street Market' whose encrypted platform, started in 2016, had about 1.15 million customer accounts, over 5400 vendors and over 60000 sale offers on hacking tools, hacker-for-hire, child pornography, narcotics, weapons, stolen valuables, counterfeit goods, and even assassination services. Access through the encrypted Tor browser, and transactions made with cryptocurrencies bitcoin and Monero shielded its customers from detection. Co-ordinated investigation by USA, Germany and Europol reveals that the administrators of this darknet marketplace were planning an exit scam, i.e. remove all the customers' cryptocurrencies held in escrow before shutting down permanently (Coldewey, 2019). To make matters worse, most rogue servers are located in countries whose cyber-laws, mutual legal assistance and extradition arrangements are inadequate or non-existent, thereby placing them beyond the reach of the victim's LEA.

To maximize gains, cybercrooks are increasingly targeting enterprises where data, network and operational processes are seen converging. For instance, in March-April 2019, the breach of consulting and outsourcing multi-national Wipro was used as a launching pad to attempt to infiltrate the networks of at least 12 clients. Initially, Wipro was in denial mode. Later on, it acknowledged the hack, but downplayed its severity despite many affected customers claiming serious compromises. India currently has no laws requiring data owners or processors to notify affected individuals in the event of a breach (Krebs, 2019).

Cloud technology guarantees time and cost savings. Yet, many organizations delay the transition from on-premises servers to Cloud Service Providers (CSPs), primarily due to cybersecurity concerns. To attract Fortune 500 clients, intelligence agencies and defense departments, globally distributed CSPs often meet military-grade cybersecurity standards and authorizations (Lyngaas, 2015). Small and medium enterprises can benefit from the advanced security controls in the cloud's infrastructure layer, smart alerting, design of disaster response scenarios, investments in AI-based cybersecurity analytics, and even outsourcing of cybersecurity tasks to Managed Service Providers with cloud design experience.

The Internet-of-Things (IoT) is a collection of heterogeneous devices and sensors that collect and exchange information to enhance productivity through automation in organizations and individual homes. Examples include smart home appliances, smart power grids, smart TVs, IP-based CCTVs, printers with memory, motion-based lighting, wearable sensors, fitness monitors, Bluetooth headsets, etc. Since IoT devices and their IT linkages do not fall under the direct oversight of the IT department, IoT is deemed

'shadow IT'. Organizations, especially the governmental agencies implementing the Smart City projects, tend to buy the cheapest IoT device that meets the functional requirements, unmindful of its low security features.

The traditional role of the centralized corporate firewall, for regulating Internet access, has changed due to proliferation of mobile technologies, branch offices, and microsites. Users and platforms have become more dispersed. Contemporary cybersecurity has to be implemented for remote users through encrypted channels like Virtual Private Networks, firewalls at branch offices, and cloud access logs. The focus has shifted from centralized cybersecurity implementation to centralized cybersecurity policy management and reporting.

Although the Government of India had published the National Cyber Security Policy 2013 on 02-July-2013 (Tomar, 2013), most states of India are yet to draft a State Cybersecurity Policy. Policy makers must recognize that differences exist in technology adoption rates between States, due to varying levels of political understanding and prioritization of cybersecurity issues, and tendency for government departments to work on computerization projects in silos. This certainly affects budgetary provisions among departments, and access to qualified human resources. For instance, the cybersecurity appreciation in States with metropolitan cities and local IT industry (e.g. Maharashtra, Karnataka, Andhra Pradesh, Tamil Nadu) would be much advanced in comparison to that of political and government executives in the North-East or LWE affected States where insurgency problems dominate the security narrative.

In India, the plethora of non-profit advisory bodies that claim to deal with cybersecurity in their charter of functions has actually made matters worse. It is creating confusion among LEAs and even high-level government and business leaders as to the appropriate agency to approach for consultation and troubleshooting. To avoid duplication of efforts, a certain degree of convergence of public cybersecurity organizations may be desirable.

Road Map to Preparedness

The paper proposes to build a road map for cybersecurity preparedness, mainly from a policy perspective. The various recommendations have been categorized into 05 broad components heads, as illustrated below:



A. Collaboration & Co-ordination

- 1. Combat systemic cybersecurity risks using a collaborative ecosystem between government, industry, academia and think tanks. Exchange of cyber-defense plans and sharing of best practices are likely to provide more effective and practical security responses to common cyber-threats.
- 2. Boost interoperability on cyber-threat intelligence among LEAs, CERT-In, researchers, private cybersecurity experts and consultants. The Cyber Coordination Centre, administered by the Intelligence Bureau, was launched at the DGsP/IGsP Conference on 22-Dec-2018 by the Prime Minister of India (PIB, 2019). It has both an access controlled website, and a WhatsApp group to promote interaction among professionals.
- 3. Share information with international sister LEAs to effectively combat digital black markets and online extremist propaganda.
- 4. Create a bilateral cyber working group with international allies like USA or Israel, which also promote exports of private cybersecurity products.
- 5. Encourage India's active participation in multilateral discussion on cyberwarfare to evolve internationally accepted benchmarks on state-backed cyber-actions. Currently, two separate groups in the UN General Assembly are focusing on evolving cyber norms (i) the Group of Governmental Experts (GGE), convened six times since 2004 and currently for 2019-21, with limited participation between 15 and 25 members, and (ii) the Open-Ended Working Group (OEWG), chaired by Switzerland and involving all interested member states (GIP Digital Watch Observatory, 2019).
- Revamp the National Informatics Centre (NIC) with more interventions from the best practices in the private sector, especially with respect to management of government websites, servers and the suite of products under the 'Digital India' Platform.

B. Legislation & Regulation

- Undertake a comparative study of cyber laws of different countries to extract and incorporate the best legal interpretations into Indian laws. This will also achieve some degree of harmony between national laws, so that legal discrepancies do not hamper the pursuit of cybercriminals across international jurisdictions.
- 2. Secure, though national legislation, the pre-conditions for implementing effective cybersecurity measures.
- 3. Encourage each State government to draft a State Cybersecurity Policy, preferably modeled on the National Cyber Security Policy 2013 updated by the National Critical Information Infrastructure Protection Centre (NCIIPC, 2013) and the National Institute of Standards and Technology Cybersecurity Framework with five overarching functions of Identify, Protect, Detect, Respond and Recover (NIST, 2018).

- 4. Harden regulation of Social Media platforms by making it mandatory for websites and apps to have an easily visible button/ link to Report Fake Profiles. Most victims tend to report being scammed or defrauded first to the SM website, e-mail admin or bank helpline, instead of seeking LEA assistance, thereby losing valuable time.
- 5. Address cyber-espionage concerns from using foreign equipment in critical national infrastructure by insisting upon underlying code examination by experts as a contractual condition.
- 6. Encourage IoT device manufacturers to improve security features. Devise a standardized Cybersecurity Ratings for IoT devices.
- 7. Encourage the use of valid and certified IT products. Wherever possible, specify the software applications that are permitted to be actively used on a system, so that everything else gets excluded.
- 8. Encourage tailored cyber insurance cover for loss of reputation and trust, revenue loss from negative media exposure, and costs for improving security infrastructure. In 2018, 350 cyber insurance policies were sold in India, exclusively in the private sector, due not only to increasing awareness on corporations on cybersecurity, but also to prevent penalties for non-compliance with regulations such as the EU General Data Protection Regulations (GDPR) and the impending passage of India's Personal Data Protection Bill (DSCI, 2019).

C. Capacity Building

- Apply an interdisciplinary approach to cybersecurity to understand the problems of non-technological nature. Diversify cybersecurity teams by hiring, not just engineers and technically skilled persons, but also persons with psychology, sociology, law and economy backgrounds.
- 2. Identify in-house talent within each ministry, department and business vertical. Sharpen employee cybersecurity skills with tailored training and certification programmes. Train key employees on social engineering and phishing.
- Create a cyber-defence reserve force using civilian cyber-experts from the private sector, who do not find regular government employment attractive from a pay or job content perspective, but who would volunteer in crisis situations in national interest (Braw, 2019).
- 4. Ensure that LEAs have sufficient powers, resources and motivated personnel for cyberattack prevention, tactical investigations, and processing of digital evidence.
- 5. Allow cybercrime investigators, as part of official duties, to access the darknet, track hacker chatter, anticipate threat trends and develop counter-hacking abilities.
- 6. Explore the nascent field of Cyberchology, which uses psychometric tests to learn more about their employees' personalities and behavioural preferences that can

reveal the degree of vulnerability of each employee to a social engineering attack, and thereby mitigate human error threats in cyber-breaches (Baxter, 2019).

- Build tolerance for temporary system outages which are essential to make system corrections, patch known software vulnerabilities, reconfigure web applications, etc.
- 8. Backup sensitive data, preferably off-site and gapped from the core network. Test restoring from backup as an alternative to paying ransom.

D. Prediction & Prevention

- 1. Establish role-based access control to network resources based on job functions. Implement two-factor authentication of system users, and disable USB ports to prevent downloads.
- Increase the ability of organizations to supplement human efforts to prevent, detect and contain cyberattacks by investing in automation technologies, such as AI, machine learning, and analytics. Build deterrence by early threat identification and regular scanning for network vulnerabilities.
- 3. Formalize threat hunting to achieve enhanced network visibility, early detection and remediation. Focus on metrics such as failed and successful access attempts, duration of each access, amount of outgoing network traffic, count of dropped data packets at firewall.
- Use AI to monitor behavioural idiosyncrasies and communication traits of key system users. A smart cybercriminal may exploit these to launch personalized attacks and gain access to the organization's systems.
- Analyze databases of online profiles of 'top 1000' fraudster profiles, identity theft incidents, ransomware attacks, etc. to generate most likely profiles of cybercriminals, most commonly used cyber-tools and modus operandi of cybercrimes, and effectively predict cyber-threats.
- 6. Simulate cyberattacks to locate and fix vulnerabilities that could be exploited by real cybercriminals. For instance, organizations should cyber defence assessment techniques, such as (a) Red team exercises where external security professionals or ethical hackers emulate cybercriminals and try to infiltrate the system to gauge the effectiveness of existing security controls, and (b) Blue team exercises where internal security personnel react without preparation to simulated cyberattacks to gauge the effectiveness of both existing security controls as well as human defensive capabilities and tactics.
- Create IT infrastructure in compliance with cybersecurity best practices and standards, such as ISO/IEC 27000, IS system audit, penetration testing, vulnerability assessment, application security testing, web security testing, etc.
- 8. Inventory all devices inside the organization, categorize those which can transmit data as IoT, and segment IoT devices from the core IT systems.

Create detailed business recovery plan to ensure continuity in the event of a cyberattack, and practice it to minimize the loss to stakeholders.

E. Strategic Interventions & Sustainability

- 1. Include cybersecurity as a component of military exercises under the Defence Cyber Agency (Singh, 2019).
- 2. Introduce cybersecurity awareness and education from the secondary school curriculum upwards, and in vocational training courses.
- Persuade universities to open cybersecurity research and entrepreneurship centres, involve cyber-experts in professorship positions, offer undergraduate degrees and scholarships in cybersecurity.
- Attract global private cybersecurity investment by providing tax benefits to MNCs who fund cybersecurity R&D centres or start-ups in India.
- Bridge gaps in leadership level communication and foster shared ownership on cybersecurity by quantifying and translating the vulnerabilities of cyber-threat assessments into operational and financial risks to the organization.
- 6. Regularly stress test the organization's CSIRPs and crisis management plans. Sustain such efforts by seeking the full support from the top leadership to invest in the necessary people and technologies.
- Involve top leadership in the process of hiring and retaining cybersecurity personnel and in IT purchasing decisions.
- 8. Earmark sufficient budget for implementing cybersecurity initiatives, meeting existing regulations, and for post-incident emergency response.

Conclusion

Cybercriminals are using innovative and devious ways to beat existing security controls. Evolution of attack methodologies from straightforward data theft and website hacking to more complex and hard-to-detect data manipulation is likely to raise doubts on data integrity, and cause long-term, reputational damage to affected organizations. Too much reliance on regulation is likely to induce a culture of compliance, and instill a false sense of security against agile and motivated attacks. In fact, regulation in the cyber domain is deemed to be too slow and conservative to be of significant value against the dynamic, fast-paced and diverse nature of cyberattack, unless supported by proactive and sustainable efforts to build cyber-resilience.

The human factor – the insider threat – is the weakest link in the cybersecurity chain. The focus should be on expanding the digital awareness of the average individual; on fortifying the institutional security posture with maturity and persistence through simulated cyberattacks that test security controls; on building a cybersecurity culture across all ranks and inclusive of all stakeholders. Cybersecurity is not just a technology problem, but encompasses managerial and operational risks. Cyber resilience can be

built only by embracing a layered approach, applied over long time frames, continual improvements, and by international synergies.

References

- Baxter, M. (2019, August 13). Cyberchology: psychometric tests are a key weapon in battle against cyber security breaches. Retrieved from https://www.informationage.com/cyberchology-psychometric-tests-cyber-security-breaches-123484706/
- Bhattacharya, A. (2019, February 07). *India ranks among the worst in the world for cyber security*. Retrieved from https://qz.com/india/1544739/india-ranks-among-the-worst-in-the-world-for-cybersecurity/
- Bianchi, D. & Tosun, O. (2019, January 19). Cyber -Attacks and Stock Market Activity. Retrieved from https://wp.nyu.edu/compliance_enforcement/2018/07/13/cyberattacks-and-stock-market-activity/
- Braw, E. (2019, July 19). Cyber deterrence needs people, not weapons. Retrieved from https://foreignpolicy.com/2019/07/19/cyber-deterrence-needs-people-not-weapons/
- Cimpanu, C. (2016, June 17). *NATO Declares Cyber an Official Warfare Battleground, Next to Air, Sea and Land.* Retrieved from https://news.softpedia.com/news/natodeclares-cyber-as-official-battleground-next-to-air-sea-and-land-505388.shtml
- Cloonan, J. (2017, April 11). Advanced Malware Detection Signatures vs. Behavior Analysis. Retrieved from
- https://www.infosecurity-magazine.com/opinions/malware-detection-signatures/
- Coldewey, D. (2019, May 04). *How German and US authorities took down the owners* of darknet drug emporium Wall Street Market. Retrieved from https://techcrunch.com/2019/05/03/how-german-and-us-authorities-took-down-theowners-of-darknet-drug-emporium-wall-street-market/
- Davis, J. (2018, July 26). Ransom ware, malware attack breaches 45,000 patient records. Retrieved from https://www.healthcareitnews.com/news/ransomwaremalware-attack-breaches-45000-patient-records
- DSCI (2019, April 26). *Cyber Insurance in India*. Retrieved from https://www.dsci.in/content/cyber-insurance-in-india
- Dudley, R. & Kao, J. (2019, May 15). *The secret trick used by firms helping cyberhacking victims: pay the ransom.* Retrieved from https://www.theguardian.com/technology/2019/may/15/ransomware-samsam-payments-bitcoin-scam
- Field, M., Chowdhury, H., & Sanchez, R. (2019, July 19). Israel's NSO: The shadowy firm behind the 'chilling' spyware used to hack Whats App and cloud services. Retrieved from
- https://www.telegraph.co.uk/technology/2019/05/14/israels-nso-shadowy-firm-behind-chilling-spyware-used-hack-whatsapp/
- Foltyn, T. (2019, August 07). FBI warns of romance scams using online daters as money mules. Retrieved from https://www.welivesecurity.com/2019/08/07/fbi-scamsmoney-mules-dating-sites/
- Geneva Internet Platform Digital Watch Observatory (2019). UN GGE and OEWG. Retrieved from https://dig.watch/processes/un-gge

- Greig, J. (2018, June 05). Nearly half of all enterprises were hacked in the last 12 months. Retrieved from https://www.techrepublic.com/article/report-nearly-half-ofall-enterprises-were-hacked-in-the-last-12-months/
- Grimes, A.R. (2018, February 13). How to prove and fight online dating and romance scams. Retrieved from https://www.csoonline.com/article/3254984/how-to-proveand-fight-online-dating-and-romance-scams.html

Groll, E. (2019, May 06). The future is here, and it features hackers getting bombed. Retrieved from https://foreignpolicy.com/2019/05/06/the-future-is-here-and-it-features-hackers-getting-bombed/

Help Net Security (2019, April 12). 77% of orgs lack a cybersecurity incident response plan. Retrieved from

https://www.helpnetsecurity.com/2019/04/12/cybersecurity-incident-response-plan/

- Ismail, N. (2018, September 10). Who is responsible for cyber security in the enterprise? Retrieved from https://www.information-age.com/responsible-cyber-securityenterprise-123474640/
- Kim, J. (2019, August 05). Crypto rally sparked by investors seeking hedge against rising global risks, says bitcoin bull Tom Lee. Retrieved fromhttps://www.cnbc.com/2019/08/05/crypto-rally-sparked-by-investors-seekinghedge-against-rising-global-risks-says-bitcoin-bull-tom-lee.html
- Krebs, B. (2019, April 19). How Not to Acknowledge a Data Breach. Retrieved from https://krebsonsecurity.com/2019/04/how-not-to-acknowledge-a-data-breach/
- Louis, A. (2019, April 20). US warns 'India-based call centre scam industry'. Retrieved from https://economictimes.indiatimes.com/news/politics-and-nation/us-warns-india-based-call-centre-scam-industry/articleshow/68963906.cms
- Lyngaas, S. (2017, November 17). *DISA to issue multiple Level 5 cloud authorizations*. Retrieved from https://fcw.com/articles/2015/11/17/disa-level-5-cloud.aspx
- Morgan, S. (2018, December 07). *Cybercrime damages \$6 trillion by 2021*. Retrieved from https://cybersecurityventures.com/cybercrime-damages-6-trillion-by-2021/
- New Zealand Ministry of Foreign Affairs & Trade (2019). *Christchurch Call*. Retrieved from https://www.christchurchcall.com/
- NCIIPC (2013). *National Cyber Security Policy*, 2013. Retrieved from https://nciipc.gov.in/documents/National_Cyber_Security_Policy-2013.pdf
- Ninan, R. (2019, July 30). Russia Solidifies Grip on its Cyberspace, via the Sovereign Internet Law. Retrieved from https://intpolicydigest.org/2019/07/30/russiasolidifies-grip-on-its-cyberspace-via-the-sovereign-internet-law/
- NIST (2018, April 16). Framework for Improving Critical Infrastructure Cybersecurity. Retrieved from https://nvlpubs.nist.gov/nistpubs/CSWP/NIST.CSWP.04162018.pdf
- Press Information Bureau (2019, June 26). *Cyber Coordination Centre*. Retrieved from http://pib.gov.in/Pressreleaseshare.aspx?PRID=1575751
- Rizkallah, J. (2018, June 05). *The Cyber Attack Price Tag.* Retrieved from https://www.sailpoint.com/blog/data-breach-price-tag
- Rodriguez, H. (2017, June 06). WannaCry ransomware attack Lessons Learned. Retrieved from https://cloudblogs.microsoft.com/industry
 - blog/health/2017/06/06/wannacry-ransomware-attack-lessons-learned/
- Segal, A. (2019, July 11). *The Right Way to Deal with Huawei*. Retrieved from https://www.foreignaffairs.com/articles/china/2019-07-11/right-way-deal-huawei

Shortell, D. (2019, May 20). DHS warns of 'strong concerns' that Chinese-made drones are stealing data. Retrieved from https://edition.cnn.com/2019/05/20/politics/dhs-chinese-drone-

nttps://edition.cnn.com/2019/05/20/politics/dns-chinese-dronewarning/index.html

- Singal, N. (2017, September 10). *Aftermath of WannaCry*. Retrieved from https://www.businesstoday.in/magazine/technology/wannacry-ransomwarecomputershackersattackransomwarebitcoinscryptocurrencyvirtual-currencymonero/story/258734.html
- Singh, N. (2019, May 15). *India's new Defence Cyber Agency*. Retrieved from https://www.medianama.com/2019/05/223-indias-new-defence-cyber-agency-nidhi-singh-ccg-nlud/
- Tomar, S. (2013, August 26). *National Cyber Security Policy 2013: An Assessment*. Retrieved from

https://idsa.in/idsacomments/NationalCyberSecurityPolicy2013_stomar_260813 World Economic Forum (2019). *The Global Risks Report 2019, 14th Edition*. Retrieved

from http://www3.weforum.org/docs/WEF_Global_Risks_Report_2019.pdf



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Artificial Intelligence in Railway Security

Chokka Raghuveer*

ABSTRACT:

Indian Railways is spread across the whole nation and its critical installations are located in remote areas without adequate basic security arrangements. Due to their sheer number, they cannot be provided with round the clock security and this can sometimes act as an invitation to criminals. In Ambala Division, there were a series of thefts of Railway electrical material from such critical installations.

Such important infrastructures are in huge numbers all along the Railway tracks and their security and sanctity is essential to ensure smooth and safe running of trains. Because of their remote location and manpower constraints, they have a monthly maintenance schedule and this makes them easy targets. To solve such problem, AI based technological solution is provided in this article.

Every such location shall be provided with a grid of PIR sensors and Vibration sensors to detect any movement inside. On detecting any movement, it shall raise an alarm in the Security Control with the location identity number. Since the maintenance schedule is once a month the rate of alarm for genuine reason is of low probability. The system also has inherent self-test mechanism to alert the control if there is any tampering/failure in the system.

KEYWORDS- Indian Railways, Railway Protection Force, Artificial Intelligence, House Breaking, PIR Sensors, Vibration (Sonic) Sensors, Relay huts, Power Sub-Stations Security, Security at isolated locations

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Future, progress, development have become increasingly dependent on technology in every Organization. Artificial Intelligence (AI) is one of the latest entry into the technology space and its impact seems enormous. For an organization like Indian Railways (IR), which effectively runs on huge infrastructure spread across length and breadth of India, adopting latest technologies is the need of the hour. RPF, the specialized Security agency of IR, in its attempt to secure this huge infrastructure needs to embrace technology and be a step ahead of criminals. In this article, use of AI to secure Railways is discussed.

Though IR is spread across the whole nation, most often than not, its sensitive installations are located in remote areas without much of basic security arrangements. Due to their sheer number, they cannot be provided with round the clock security and this can sometimes act as an invitation to criminals. In Ambala Division, have noticed such crime pattern where within a span of four months, there were a series of thefts of Railway electrical material from Relay Huts and Traction Sub-stations.

Relay huts are rooms which house the Signal equipment concerned to a particular yard/station. They are nerve centers for the operational signals at stations and its implemented with the help of innumerable Relays. Huge sets of batteries are used to power them round the clock. They are a must near every station, however big or small and irrespective of the location of Railway station. Such remote relay huts become primary victims of crime and are targeted as there exist no round-the-clock security, long periodic maintenance schedules, no presence of Railway employees in its vicinity. Similarly, Traction Sub-stations are electricity feeders to the overhead traction power to run the electric Locomotives all along the Electrified sections. Even these Sub-stations contain numerous Electrical Batteries whose role is to act as stabilizers/regulators and to provide stable supply to the overhead electricity.

Such important infrastructures are in innumerable numbers all along the Railway tracks and their security and sanctity is very important to ensure smooth and safe running of trains. Because of their remote location, inaccessible terrain and constraints in manpower, these cannot be checked daily. Apart from the loss of property the entire train network is jeopardized by such acts of crime. To solve such problem, AI can be of great help. A pilot study is underway in Ambala division on the same and its details are elaborated.

In Ambala Division, there were a series of theft of electrical equipments from such installations in a period of four months. On careful analysis of these incidents, the following was the modus operandii used by the criminals,

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 - 1. In each case, the entry into the installation was done at different but at the weakest part of the building.



Fig1,2 - theft1 and theft2

Fig3 - theft3

- 2. The maintenance schedule of these locations is once in every month. Hence, no railway employee was available/working in their vicinity.
- 3. A gang of 3-4 criminals were operating. The weight of the batteries used in these locations is heavy and in each case of theft 20-30 batteries were stolen.

Though two gangs were busted and most of the stole property was recovered, it was a case of reactive security. Need of the hour is to be one step ahead of criminals and to adopt proactive security. In pursuit of being a proactive security agency, have come up with solutions to alert the security system whenever someone tries to commit a similar crime.

The solution of using CCTV surveillance at such locations was the initial thought but

without effective detection mechanism it would also be a reactive measure. Sensor based CCTV could be the next solution but the cost involved in having such sensor based CCTV system can be prohibitive when it needs to be installed at huge number of locations. So, came up with a smart technological solution which triggers an alarm when the attempt to theft takes place. To implement the same, multiple sensors, controller and control unit are used.

Proximity Infra Red Sensors (IR Sensors) are already quite popular and can detect any change in environment in 2-3mtr region. These can help in identifying an uninvited intruder into the building. Due to the constraints in their range, a grid of such sensors is placed inside the room so that atleast one sensor identifies a suspect's movement.

The advantage of a PIR sensor over an IR sensor is that PIR sensor detects motion with a combination of IR and thermal based sensors. This helps in preventing false alarms based on the movement of non-living objects like ceiling fan. Also, the sensitivity of the sensors are planned to detect larger bodies and not small rodents, insects which are frequently seen in such isolated locations. This helps in generating alarm for a real intrusion with a high probability.

Vibration (sonic) sensors are useful to detect any vibration and work on sonic waves. Based on the modus operandii of the criminals it can be seen that walls or windows are broken. Vibration sensors would be an ideal solution for such cases. These would be integrated into the walls so that any impact to break the wall/window on the wall is captured and an alarm is triggered.

Sufficient care is taken to ensure false alarm does not trigger for a movement of train. These locations are located in close vicinity of railway tracks and there exists perceptible vibration for every movement of train. The sensitivity of the sensors would be set to capture only strong vibrations which are generated when a hammer is hit against the wall.

It shall be a grid of such sensors on the walls to ensure any hammer hit is captured by multiple sensors and there exist no black spot.

The signals from these two types of sensors are sent to the controller inside the room. Controller logic is programmed raise alarm based on the combination of the triggers from these sensors and sufficient time gap is maintained to ensure consistency of alarms triggered by these sensors.

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The following diagram depicts a standard composition of Relay Hut,



Grid of PIR Sensors



Grid of Vibration Sensors



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Flow chart at the Relay Hut Security Control Unit

- Next task is communication. How the controller communicates to the RPF Control? The controller unit is provided with a SIM card. Every relay hut or TSS shall be given an unique identity number. Once the controller logic detects an alarm, it sends a SOS message to the control with its identity number.
- The RPF control has a reception unit which receives the SOS message and raises the alarm with both sound and display to alert the staff who would in turn activate the field staff. As a safety measure, the controller unit would send a self-check message to the Control every day so that any failure in the controller unit or sensors is immediately attended.

Sample pictures of the sensors in a relay hut (pilot study; in production mode all cabling and controllers will be concealed under the walls and only the tiny sensor will be exposed to outside) are shown below,



Fig 4: Vibration Sensor

Fig 5: PIR

Once it is fully implemented, with due testing, such crimes could be averted on real time basis and such crimes could be a thing of past.



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Drones: Threats, Countering Techniques & Challenges

Colonel Deepak Kumar*

ABSTRACT

The recent commercial sales explosion of small low cost drones has renewed discussion amongst security and law enforcement agencies at all levels of government concerning the threats presented by drones. These concerns have been discussed and assessed numerous times. However, with the increasing threat of use of drones by rogue elements due to proliferation of easy availability of drones having low cost over the past few years have renewed concerns for the security agencies. The capabilities of these devices for surveillance, reconnaissance and payload delivery coupled with inherent portability and an operator with evil intentions have proven to be deadly. Although, the threat possibilities of a rogue drone are many and limited by imagination alone, they can be broadly classified as a projectile, Improvised Explosive Device (IED) delivery, Chemical Biological Radiological and Nuclear (CBRN) payload delivery, surveillance of targets, logistics delivery, air space interference, electronic warfare etc. To cater for all variety of drones i.e. Autonomous and Non-autonomous, no single equipment/technology will suffice as there are blind spots in each technology which is available today. Hence, there is a necessity of integrated and layered approach for detection, identification and neutralisation methods to mitigate the threat of rogue drones.

This article focuses on the threats posed by rogue drones, various counter drone technologies options available in the market to include detection, identification and neutralisation in an integrated manner, the limitations and the challenges faced by these technologies and a suggested deployment of various detection, identification and neutralisation systems i.e. sensor and effectors and counter drone detachment. In addition, the article also touches upon the requirement of policy framework of

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regulations for drones along with counter drone technologies for effective implementation.

"In the age of Almighty computer, drones are the perfect warriors. They kill without remorse, obey without kidding around and they never reveal the names of their masters"

1. Introduction.

The first commercial drone was demonstrated at the Consumer Electronics Show (CES) 2010. Since then drones have demonstrated significant potential in the commercial applications across industries. Today, drones are being used across construction, agriculture, oil and gas and law enforcement amongst others. Trials are being performed for medical supplies, pizza delivery and emergency assistance. The applications of drones are further augmented by adoption of technologies like cloud computing, machine learning and artificial intelligence. The trajectory of demand of drones in India is also in line with global trends and has seen an exponential growth.

However, every technology has the potential for misuse and this is applicable to drones as well. Crash landing of a small quad copter on the lawns of the White House in January 2015, attempted terrorist attack on the Venezuelan president using drone in August 2018, crash landing of a micro drone near German Chancellor Angela Merkel in December 2013, alleged use of drones by Houthi rebels in Yemen and drone strikes by Islamic State militants in Syria are the incidents which have raised questions on the threat posed by the drones in today's sub conventional threat scenario and brought to the fore the vulnerabilities in the security apparatus especially VIP security across the globe.

As indicated above, when used with malicious intent drones have the potential to be disruptive and destructive and the threat is more pronounced due to easy availability of the drones off the shelf for a paltry amount. In view of this, multiple governments have taken cognizance of the risk and have started investing in counter drone technologies.

2. Threat Analysis.

Easy availability and low cost of drones pose a proliferating and potent threat in our security apparatus to carry out attacks on VIPs or key targets. Although, the threat possibilities of a drone are many and limited by imagination alone, they can be broadly classified as below:-

- (a) As a projectile.
- (b) Improvised Explosive Device (IED) delivery.
- (c) CBRN payload delivery.
- (d) Surveillance of targets.
- (e) Logistics delivery.
- (f) Air space interference.
- (g) Electronic warfare.

- (h) Spying and tracking.
- (j) Smuggling.
- (k) Data leakage.
- (l) Control and spoof to create penetration risk.

Although, the use of drones is marketed for recreational, educational, logistics delivery and other miscellaneous official purposes, its misuse by rogue elements is very likely and the rogue drones pose a clear and escalating threat.

3. Countering Techniques.

To combat the threats highlighted we need to formulate policies, sensitise the environment on its manifestation and adequately equip as part of effective counter measures. Firstly, we should discuss the policy framework in India.

(a) Regulations and Policy Framework.

The Directorate General of Civil Aviation released Civil Aviation Regulations (CAR) version 1.0 in December 2018 and this policy document marked a significant milestone in drone adoption as it sought to regulate and legitimize drone ownership and operations.

According to CAR, drones are categorised into nano, micro, small, medium and large, based on weight and payload. The CAR provided for an online registry platform (Digital Sky) for drone ownership and operations which is key to laying a strong foundation for an effective regulation.

Sr No	Туре	Maximum All-Up-Weight
(i)	Nano	Less than or equal to 250 grams
(ii)	Micro	Greater than 250 grams and less than or equal to 2 kg
(iii)	Small	Greater than 2 kg and less than or equal to 25 kg
(iv)	Medium	Greater than 25 kg and less than or equal to 150 kg
(v)	Large	Greater than 150 kg

Categorisation of Drones

Although, the CAR framework in India provides a robust structure to mitigate the threats from rogue drones, however, implementation will be a major challenge due to increasing air traffic and latent population of unregistered drones.

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(b) Concept of Countering the Drone Threat.

The concept of countering a drone threat is a relatively new field wherein global think tanks and industries are proposing different solutions for achieving the aim. It is widely accepted that the counter measures should be layered and integrated for it to be effective. Few of the major and essential layers are given in the figure below and discussed in detail subsequently.





(i) **Deterrence**. The basic layer for countering a Drone threat will be to deter the usage of a Drone for illegal/undesired activities and monitor the usage. The same can be achieved by formulation and promulgation of strict guidelines for procuring, owning and operating a drone. Mandatory unique serial No identification & registration of drone is recommended with legal punishments for non-adherence to guidelines. Currently law enforcement agencies are issuing instructions / legal orders enforcing a no fly zone for Drones in important areas / during important events.

(ii) *Detection*. When deterrence does not have its effect as is the case with all terrorist activities, it is essential to have a robust detection capability. There are a range of options/techniques available in the market to cater for all types of drone threat (autonomous and non-autonomous). The details are as under:

- Radar Detection System.
- RF Detection System.
- Electro Optic/ IR Detection System.
- Acoustic Detection System.
- Combination of Detection Systems.
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- *Radar Detection System*. Most UAVs/drones have a very small Radar Cross Section (RCS) which is well below the detection threshold of air force / airport radars. A drone Detecting Radar can detect even small UAV/drones which are comparable in size to birds. The radar detection concept basically involves detection of drones using Doppler effect and analysing various parameters of electromagnetic waves emitted from a transmitter and reflected from an object to determine the size and speed of drone. While radars can be used to detect and track a drone, the detection reliability is low and highly susceptible to weather conditions.
- *RF Detection System*. The RF detection system works by detecting the RF transmission from the remote controller (pilot) of the drone. It is an effective system for remotely controlled/ non-autonomous drones. However, the system is not effective against drones that are launched on autonomous flights. Also, these systems are limited in their capability to accurately locate a drone in space. The range of these systems may vary from 3 to 40 kms.
- *Electro Optic/ IR Detection System*. This system relies on the physical visibility of the drone using visual cameras. This method is generally used for homing and looking onto the drone once it is initially detected by any one of the above methods. Thermal cameras are a good option for darkness. However, the range of this system is relatively less than above mentioned systems.
- Acoustic Detection System. This system relies on the sound/ decibel level of drones (rotor movement etc) and compare with a library of sounds produced by known drones. However, this method has a limitation of range and is generally used to confirm already detected drones. Also, sound signatures of drones have

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a high susceptibility to surrounding noise, wind direction and ambient temperature.

• Combination of Detection Systems. As seen above, various detection systems have their own limitations, hence, for a robust detection capability we need to have an integrated system having variety of different sensors and a number of considerations need to be done when evaluating a detection method to include factors including ambient light, weather, ambient noise, line of sight, cost. A comparative analysis of various sensors for different factors is as under:-

	Active Radar	RF Scanner	Visual	IR	Laser	Acoustic
Light	\checkmark	\checkmark	\checkmark	-	\checkmark	\checkmark
Darkness	\checkmark	\checkmark	-	\checkmark	\checkmark	\checkmark
Noise	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
Birds	-		-	-	-	-
Adverse Weather	-	-	-	-	-	-
Multiple drone detection	N	Only if working on different channels	V	\checkmark	1	Only if different sound type

(iii) *Identification*. Identification layer may be merged with detection layer in some techniques like Visual Detection, Acoustic Detection and Electromagnetic Spectrum Analyzer. The Identification layer is more pronounced when used along with other detecting techniques like Radar & Thermal/ Infrared detectors where it is essential to differentiate a drone from bird so as to initiate remedial measures. The process of

identification involves comparative analysis of threat/ drone rotor movement, speed, altitude and flight path viz birds to correctly differentiate and classify. In addition, it involves maintaining database of various types of drones and comparing the incoming threat.

(iv) *Neutralization/Destruction*. Once a drone is positively identified as a threat, it has to be brought down from the air in the least possible time frame with no/minimal collateral damage. Many techniques are available to bring down the drone which may involve forcing down the drone to land(by electronic means) or to completely destroy it (by physical destruction). Since drone technologies keep advancing over time, it is essential to have more than one or a combination of neutralization/destruction techniques to bring down a drone. Few of the techniques are given below:-

(aa) Non Kinetic Methods.

- *RF Jamming*. RF jamming guns typically work by the transmission of radio signals using high power that disrupts the communication between Drone Controller and Drone and thus initiating a default 'return to home' manoeuvre or a 'standby' manoeuvre and hence neutralising the threat.
- RF Handheld Jammer Guns.
- *Global Navigation Satellite System (GNSS) Jamming*. Disrupts the drone's satellite link such as GPS or GLONASS which is used for navigation. Drones that lose their satellite link will hover in place, land or return to home.
- *Spoofing*. Allows one to take control of the targeted drone by hijacking the drone's communication link.
- **Drone Nets.** Drone nets are used to capture rogue drones by flying a big net attached to a good drone which is then flown near the rogue drone to capture its propellers on the net thus catching and neutralising the drone.
- (ab) Kinetic Methods.
 - Sharp ShootingWeapon. Police forces are authorised to shoot down unidentified flying objects to ensure public safety. However, this method is dangerous and may lead to collateral damage due to stray bullets. Hence, there is a need to integrate technology in sharp shooting weapons for higher probability of

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shooting down a drone and negating the errors due to shooter skills.

- *High Power Microwave and Electro Magnetic Technology*. This technology essentially uses the same technology as household microwaves but is millions of times more powerful. The pulse that comes out of the system is very short at extremely high power, which is capable of destroying the electronic components in drones.
- *Laser*. Destroys vital segments of the drone's airframe using directed energy, causing it to crash to the ground.

(ac) Use of Unconventional Methods.

- Police forces have also been dabbling with non-technology solutions to bring down rogue drones.
- *Eagles*. In some of the countries, eagles are being trained to bring down rogue drones by latching on to the propellers with their talons.
- *Water Canon*. Use of high pressure water canon guns is also one of options for disabling rogue drones and a workable practical solution.

(c) Counter Drone Equipment Architecture.

Based on the approach discussed above, a suggested architecture of Counter Drone Detection, Identification and Neutralisation Sensors and Effectors is given in the figure below. The layered architecture given below can be sequential or overlapping or both, depending upon the features/ capability of various sensors and effectors.



(d) Counter Drone Detachment. The effectiveness of detection, identification and neutralisation by most of the equipment discussed above is likely to be out dated over a period, since drone technology keeps advancing and threat perception keep changing. Hence, it is Imperative to have fail proof mechanism by involving human elements to plug the gaps in technology. The same can be achieved by deployment of Anti Drone Detachments aided by equipment discussed above in a tiered manner.

4. Challenges.

Nations usually have Air Defence (AD) protections using AD Radars, Air Force Fighters and missiles. But in the case of threats from small drones, they are null and void. Counter drone systems are not without challenges at the level of performance, practicality, legality and policy. As much as these technologies are successfully tested in controlled environments, their success and applicability in real world scenarios is yet to be completely established. Anti-drone technologies are still very nascent and companies are trying to build systems involving multiple technologies to deal with all possible contingencies. However, their effectiveness is yet to be established and some of the challenges that we have seen in the market are given below:-

- (a) Detection Challenges. Every detection system has drawbacks and limitations. One of the major technical challenges today is detection of various types of small drones including nano drones due to very small signature and small Radar Cross Section (RCS) value. Particularly, the smaller drones as it cannot be detected by most radar networks and can be easily mistaken for a bird. Even if the existing radars are tweaked or upgraded to detect, they are likely to give false alarms at every bird. Electro Optical (EO) detection systems can only operate during day time. EO, IR and RF systems must have a line of sight with the intruding drone. RF detection systems only detect certain frequencies and need to be regularly updated. Similarly, acoustic systems also rely on a library of sounds and might be deaf to drones not covered by library.
- (b) Identification Challenges. The small drones have small signatures; be it visual, thermal, acoustic or electromagnetic. Identification and classification of the detected threat is the next

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challenge to the security apparatus. It involves identification of variety of drones ranging from nano to large size drones having payloads varying from 250 grams onwards to 150 kilograms and beyond, as there is a need for effective integration of various software and hardware to enable precise identification at short notice. Hence, the identification sub system has to be sensitive to avoid overwhelming number of false alarms.

(c) Neutralisation Challenges. There are a range of options for tackling the threat due to drones viz Kinetic/ Hand Kill and Nonkinetic/ Soft Kill. However, Kinetic Kill options involving shooting down with sniper rifles are very tricky and demand a high level of skill and expertise on the part of shooter. Another major challenge is of high risk of collateral damage especially during VIP security in crowded areas. Water cannons have a limited range of operation and use of Eagles in the Netherlands has not been encouraging.

Non-kinetic options involving jamming, spoofing, use of high power electromagnetic pulse and lasers are having their own challenges. Plain jamming can push the drone out of control which is risky in crowded areas. Jamming systems can also interfere with legitimate communication links in the vicinity of counter drone systems. Spoofing is technologically challenging and difficult to build and implement as it involves taking operational control of incoming drone.

- (d) Distinguishing Legitimate and Rogue Drones. In future operating environments where legitimate drone use will be common, counter drone system should be capable of differentiating legitimate drones and rogue drone in the airspace. Hence, there will be a requirement of regulations regarding no-fly zones, demarcation of zones and challenge of implementation of these guidelines and regulations by the law enforcement and security agencies due to increasing air traffic of drones.
- (e) *Rapid Technological Advancements*. Drones is a nascent industry that is still evolving technically and changing so rapidly that any counter measure becomes obsolete rapidly. Hence, researchers in counter drone industry to be prepared and geared up for finding new and flexible solutions.

5. Conclusion.

Rogue or weaponised drones pose a clear and escalating threat in the sub conventional realm of operations. The increased danger means that layered counter drone approaches are now essential for the security and law enforcement agencies across the world detecting, identifying, tracking and neutralising not just lone drones but coordinated groups and swarms. Also in addition to equipping and procuring various counter drone systems by security and law enforcement agencies to thwart the challenges mentioned above, there is a necessity of formulating and implementing strict guidelines and regulations at the national level. The CAR framework for drones in India is a right step and aims to provide a robust structure to mitigate different risks and threats from rogue drones.



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Research as a Reinforcer for Effective Police Training

Prof. A.K.Saxena*

1. Introduction

'Training', 'Research' and 'Consultancy' are reinforcing processes ensuring organizational excellence (Fig.1).



Fig 1: Research and Consultancy as reinforces of training

It has been observed that `Training Process' in an organization has no overlapping with `Research and `Consultancy' processes. The inputs of `Research' and `Consultancy' Projects to the training function are necessary. Gore Committee on Police

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Training (1970) has observed the total absence of any research facilities in our Police Training Institution as articulated below:

"We have been struck by the total absence of any research facilities in our police training institutions. The inevitable result has been that all police training is based on old ideas and practices and the limited experiences of individual members of the instructional staff even while conditions relating to and around police work have been changing fast. In order that the police training institutions remain intellectually vibrant and upto date in their knowledge of police problems, research should be considered to be one of their basic functions." While fundamental research may be undertaken mostly by the central or state research units, the training institution should also undertake a certain amount of applied research through its instructional staff so that the hiatus between training and practical police work may be eliminated as far as possible. Research a vehicle through which the trainers take not of the administrative attempt to provide answers to real-life problems. In a developing country the social milieu and administrative reality undergo rapid changes, it is important for the training institutions to have a close observation and is most understanding of changing situations. We recommended therefore that every training institution should have a separate cell under a competent this purpose. In taking up research work along with training assignment trainers improve both their competence and credibility. They improve techniques and practices which lead to an improvement in training programs and competent trainers will together ensure greater participation and effectiveness of the training process" in 2019 too, the condition of research remains almost the same. No research cells have been instituted.

This paper proactively analyses the following issues and presents plausible recommendation-

- Where should `Research' focus to enhance Police Training effectiveness in our country?
- What kind of research is required? What should be appropriate research methods?
- What kind of networking and collaboration are required for research in Police?
- How to enhance the overlapping of `Research' and `Consultancy' processes with Training in the police?
- Based on the above analysis, what are the specific recommendations of the author?

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2. Research and Training Interface

There are 3 aspects in training which are to be addressed by `Research' for enhancing its effectiveness. These aspects are depicted in the below cited Figure 2.



Figure 2: Domains of Training

3. Explanations:

(i) Contents of Training: It should include :

- Length, breadth, and depth of subject-matter of coverage.
- Organizational objectives vis-à-vis training requirements (alignment).
- Stated objects /competencies requirements and the subjects for training.
- Course designs
- Well developed training material and resources in consonance with the identified subjects/topics.
- (ii) **Delivery of Training** should include the following:
 - Training Methodology
 - Competence of trainers
 - Learning infrastructure and its optimum use by the training institution
 - Tools/Techniques for police imparting training :

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- Case studies
- Simulation exercises
- Role-playing exercise
- Discussion outlines
- Training manuals
- e-learning material on `Police subjects'.
- Well developed training evaluation methodology.
- (iii) Management of Training: It includes:
 - Leaders vision of `Training' resulting in strategic plans for implementation in training institutes to improve further the content and the process of training.
 - Adaption, creation and optimum use of training infrastructure for indoor and outdoor training.
 - Faculty Development Programmes.
 - Effective administration of training involving PODSCORB
 - o Planning
 - o Organizing
 - o Directing
 - o Staffing
 - o Coordinating
 - o Reviewing
 - o Budgeting
 - Facilitating Research Function for effective training.

4. Research Function:

It includes 2 kinds of research -

- Fundamental Research
- Applied Research

(Training the Faculty in `Action Research Methodology will be an added advantage).

Methods of research include historical, descriptive and experimental methods. Usually, the following techniques are used in research-

- Questionnaire
- Opinionnaires
- Observation
- Focus Group Discussions (FDP)
- Interviewing.

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- Workshops
- Literature Survey
- Statistical Analysis of the existing data on crime etc.

5. Research related to the Contents of Training

The main objectives of research related to the contents of training encompass:

- To analyze qualitatively recent literature on various police subjects for inclusion in the training material.
- To conduct Training Needs Assessment (TNA) surveys covering all ranks and their respective duties/responsibilities.
- To conduct competency mapping exercises for all ranks.
- To design and validate training interventions based on either `Training Needs Analysis' or 'competency mapping'data.
- To study the feasibility of existing training course designs through `Focus Group Discussion (FGA) and Opinion Survey from all stakeholders.
- To formulate the objectives of training courses through extensive research. (It will facilitate the right selection of subject matter of training in terms of length, breadth, and depth of coverage).
- To test in the field the applicability potential of existing and newly evolved training programs and effect changes subsequently.
- To set the masterly level to be attained by the trainees especially in highly skilled based courses including outdoor training domains.
- To evolve modules for the `Individualised' instruction covering highly gifted trainees to make them the nodes of excellence.
- To standardize research methodology for Training Needs Assessment, Competency Mapping, Development of Course Designs, critical analysis of the existing system.

6. Research related to the effective delivery of training may have the following objectives:

- To study the feasibility of various training methods in imparting police training.
- To evolve strategic plans for integrating the quality of learning infrastructure in the training institution.
- To study the feasibility of Coaching, Mentoring, Counselling and guided practice to reinforce the delivery of training.
- To develop instructional material scientifically through research.(Material may include –Case studies, simulations, role-playing, scripts, training

manuals, reading material, e-learning material, field visits guidelines, group plans, etc).

- To validate the battery of psychological tests for the personality development of police trainees.
- To develop `Training Evaluation Methodology' focusing on police training intervention to cover:
 - Reactions evaluation
 - Learning evaluation
 - Job behavior level evaluation (Transfer of learning on the job)
 - Ultimate results level assessment
 - Returns on Investment (ROI).
- To develop the research-based training program the Police trainers in the following domains :
 - Subject- matter up-gradation
 - Training techniques and methods
 - Training Needs Analysis & Designing.

7. Who will conduct the research?

It is felt that a collaborative research model will be the best for Police in our country. Networking for collaborative research with the following may be required –

- Institutions of eminence (IIMs/IITs/TISS/XLRI/ASCI Hyderabad/Central University etc).
- University departments.
- Ph.D. Scholars working in the domains of police work in various Universities.
- Enthusiastic Police Officers with the Academic bent of mind.
- Training Consultants.
- Faculty of NPA trained 'Research Methodology'. (Research will have to be funded by MHA, BPR&D, and NPA. Budgetary Provisions are required).

8. Recommendations:

Following measures may be taken in Police with regard to research in Police training in our country:

 Top management commitment to research in police seems to be one of the important factors. The attitude that research is done in universities and research organizations requires a paradigm shift. Top leadership in Police should be exposed to the top police training and other organizations in India and abroad.

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Training in Strategic Management, Research Methodology, and Management of Training Function should be conducted for them. `Management of Training and Research' module may be put in MCTP III, IV and V being conducted for the IPS officers in the SVP National Police Academy.

- 2. Identification of the Universities and institutions of eminence in India and abroad is necessary for collaborative research to reinforce the training function.
- Induction of core faculty highly specialized in `Research Methods', `Educational Psychology', `Criminology', ` Law', `Education and Training', `Sociology' etc will be an important step for integrating `research' with `training 'in Police.
- 4. Continuous training of police and core faculty in `Research Methodology' and `Training Methodology' is necessary.
- 5. Creation of `Research Cell' in the Police Training Institutions as per the Gore Committee recommendations (1970) will be an important initial step.
- 6. Funding of research projects by the faculty should be done liberally.
- 7. Research function in BPR&D and NPA require a fresh look for contributing more to the content and process of Police training.
- 8. 'Knowledge Management Architecture' is required to be built-up either at NPA or at BPR&D for acquiring, storing, generating and disseminating the knowledge generated through police research in India and abroad. The proposed architecture will ensure effective dissemination of both conceptual and procedural knowledge. This step will enhance the reinforcement of research with police training.

Summing up

In this paper, it has been emphasized that 'Research' should reinforce police training for upgrading the quality of 'Subject matter', 'Training Techniques' and 'Management of the Training' function. Gore Committee's observation in 1970 still holds true to a great extent. 'Research Cells' and other research facilities have not been created in the training institution. The research, if it has to contribute to the effectiveness of Police training', 'Management of Training Function'. The research will have to be both fundamental and applied in nature. Strong collaborative linkages with the institutions of eminence in India and abroad is necessary. Top management commitment to training interventions of core faculty in police training institutions, continuous training of faculty and creation of knowledge on Police from India and abroad seem to be a necessary step in this direction.

Bibliography

Gore Committee Report on Police Training, Government of India, 1970.



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Artificial Intelligence: An Intangible Capacity Builder for India

Capt Rahul Tiwari*

ABSTRACT

Artificial intelligence (AI for short) is widely acknowledged to be one of the most dramatic technological game changers of our age. It has already started impacting most walks of our private and public life. We have now arrived at a juncture where turbulent advances in AI may once again upset the balance of power.

The use of Al has the potential to ameliorate several existing structural inefficiencies in the discharge of governmental functions.

However, despite the possibilities for AI in both civil and military applications, there are many challenges to consider. For instance, many AI techniques

- 1) Lack sufficient transparency,
- 2) Are vulnerable to imperceptible manipulations of input data even without any knowledge about the input and
- *3)* Are based on machine learning which requires large amounts of training data; this is a challenge since there is often a lack of sufficient data.

In India, much of the technological capacity and funding for AI is coming from the private sector. A trend, expected to continue till the government engages in partnerships with both start-ups and large corporations alike.

While there is a desire by the government to develop AI-driven solutions in sub-sectors including governance, law enforcement, education, defence and in judicial decision-making processes. It is yet to be underscored by adequate financial, infrastructural, and technological capacity. This gap provides India with a unique opportunity to understand

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some of the ethical, legal and technological hurdles faced by the West both during and after the implementation of similar technology and avoid these challenges when devising its own AI strategy and regulatory policy.

KEYWORDS

AI	:	Artificial Intelligence		
NLP	:	National Language Processing		
ANI	:	Artificial Narrow Intelligence		
AGI	:	Artificial General Intelligence		
ASI	:	An acronym for the fields of Science, Technology,		
		Engineering and Math		
IIT	:	Indian Institute of Technology		
IISC	:	Indian Institute of Science		
R&D	:	Research and Development		
IoT	:	Internet of Things		
MeITY	:	Ministry of Electronics and Information Technology		
NITI	:	National Institute for Transformation of India		
N-AIM	:	National Artificial Intelligence Mission		
CCTV	:	Close Circuit Tele Vision (Camera)		
PAIS	:	Punjab Artificial Intelligence System		
ISRO	:	Indian Space Research Organisation		
HTC	:	High Tech Computer Corporation (Taiwanese		
		Company)		
API	:	Application Programming Interface		
ELINT	:	Electronic Intelligence		
HUMINT	:	Human Intelligence		
CAIR	:	Centre for Artificial Intelligence and Robotics		
DRDO	:	Defence Research and Development Organisation		
MARF	:	Multi Agency Robotics Framework		
CDAC	:	Centre for Development of Advanced Computing		
DAKSH:		Electronically Powered Robotic Bomb Detection		
		and Disposal Vehicle		
ROV	:	Remotely Operated Vehicle		
NETRA :		Unmanned UAV developed by DRDO		
UAV	:	Unmanned Aerial Vehicle		

1. Introduction

What is AI?

The father of Artificial Intelligence, Prof. John Mc Carthy, who first coined the term "Artifical Intelligence" in 1956, describes it as "The science and engineering of making intelligent machines, especially intelligent computer programs".

This definition has come a long way since its inception in 1956. In its broadest sense, AI has been described as **"the study of the computations that make it possible to perceive, reason, and act" or "the automation of intelligent behaviour",** which is driven by a general "study of intelligent agents" both biological and artificial.

There are dozens of definitions and typologies of what constitutes. However, in concrete terms, and in most applications, AI is defined as "non-human intelligence that is measured by its ability to replicate human mental skills, such as pattern recognition, understanding natural language (NLP), adaptive learning from experience, strategizing, or reasoning about others".

With the definition generally understood, let us have a look on the generations of AI. There are three tiers of AI which can also be seen as three consecutive generations of AI:

- a) Artificial Narrow Intelligence (ANI): Machine intelligence that equals or exceeds human intelligence for specific tasks. Existing examples of such systems would be IBM's Deep Blue (Chess) & Watson ('Jeopardy!'), Google's AlphaGo (go), High-Frequency Trading Algorithms, or indeed any specialized automatic systems performing beyond human reach (e.g. Google Translate; spam filters; the guidance systems of point-defence anti-missile cannons etc.).
- b) Artificial General Intelligence (AGI): Machine intelligence meeting the full range of human performance across any task
- c) Artificial Superintelligence (ASI): Machine intelligence that exceeds human intelligence across any task.

2. The Evolution

The evolution of AI can be understood as periodic development in application of machines ranging from computing to programming and finally graduating to simulation of human cognitive abilities. The first was of **tabulation era**which started from early 1900s and lasted till 1950s. The first era gave way to the **programming era** which lasted as long as recent 2010s and the era that has started to really break the shackles and barriers between the need of human intervention to completely automated systems is the **Cognitive era**. The same has been illustrated in the image below

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The Tabulating Era The Programming Era The Cognitive Era

Currently, the cognitive era or the ultimate goal of ASI is on the cards and is being played in a very subtle manner by countries around the world with the application of AI in many sectors such as economy, mapping technologies, financial, surveillance, smart vehicles, and developing robots that are used in medical, industrial and military tasks.

In the words of President Vladimir Putin, "Whoever leads in AI will be the ruler of the world." His comments came at a time when artificial intelligence (AI) had freshly burst into the public consciousness, centred on the so-called "AI Race."

Governments all around the world are scrambling to make the most of the coming paradigm shift, which is expected to increase global GDP by \$15.7 trillion or 14 percent by 2030, improving productivity and efficiency in a wide range of sectors. Below is comparison of the funding by major players in the field to gain supremacy over one another and to achieve unsurpassable levels:

2.1 Al & India

India, which is a relatively a late entrant in the racehas massive potential in AI research and application. While it only released a national AI strategy earlier this year, R&D on the applications of AI has been making slow but steady progress for three decades, making India one of the dark horses to look out for in the AI race.

India certainly has the talent and expertise to be an AI power. It produced 643 widelycited AI research papers in 2015, behind only the United States and China, and churned out 2.6 million STEM graduates in 2016. Despite



this, until quite recently AI research in the country was primarily housed in universities, namely the Indian Institute of Technology (IIT) and Indian Institute of Science (IISc), and was focused on fintech and industrial applications.

AI R&D activity in the public sector was limited, although leaders like Prime Minister Narendra Modi had taken note of the emerging trend. The turning point came in 2018, when the Indian government established a national program on artificial intelligence during the Union budget session. The immediate driver of this policy was China's AI Strategy, released in July 2017, which laid out a comprehensive national-level plan to make China the global leader in AI.

India's AI program has a broad mandate, encapsulating digital economy, the Internet of Things (IoT), and basic R&D. It established the AI Taskforce, with members from the Ministries of Commerce, Electronics and Information Technology (MeITY), Defence and the NITI Aayog, as well as academia and the private sector.

The Taskforce's report, released in March 2018, lays out a series of recommendations to address the challenges India faces in AI development and application:

- a) Shortage of data and necessary infrastructure to process and distribute big data securely
- b) Shortage of AI talent to manage AI systems
- c) High cost of deploying AI systems

The report recommends setting up a National AI Mission (N-AIM) to coordinate public AI activity; establish a "network of alliances with academia, industry and startups"; create a secure "data marketplace"; and workforce training. Among its suggestions, the Taskforce highlights national security, mentioning how unmanned vehicles and autonomous weaponry present both an ethical challenge and an opportunity for improved efficiency and applications.

This article aims to briefly touch the upon application of AI in the sectors of law enforcement, education, and defence, amongst various others highlighting the progress of AI and the subsequent way forward to mitigate the existing challenges. The implementations certainly seem to promise a lot but the actual delivery needs to be seen.

3. Al Implementations In Law Enforcement

Globally, key AI technologies are being explored, and in some cases used by law enforcement, agencies, include facial and speech recognition, robo cops, autonomous patrol cars, and predictive analytics. India, is still in the nascent stages of developing technological proficiency to fully implement AI solutions for law enforcement purposes and many projects are still at the stage of conceptualization. At the same time, India is developing projects that will enable the infrastructure and data necessary to fuel AI solutions in the law enforcement sector.

a) Speech and Facial Recognition

There was a recent partnership forged between Best Group and Israeli security and AI research company Cortica to analyze the terabytes of data streamed from CCTV cameras deployed in public areas. A key objective of this project is to improve safety in public places including streets, bus stops and train stations.

Punjab Police, in association with Staqu has commissioned the Punjab Artificial Intelligence System (PAIS), which digitizes criminal records and automates research through features like facial recognition. Facial recognition enables police to retrieve information on the criminal. If a police officer locates a suspect, he clicks their picture. The photograph in the database. The application will also return the criminal background of the individual within minutes to the mobile phone of the officer in charge.

b) Robo-Cops

A Hyderabad-based technology start-up, H-Bots Robotics has developed a smart policing robot that is yet to be deployed in the field. The 'robocop' can play a role in handling law and order, and enhancing traffic management. If it were to be deployed autonomously, it can engage in a variety of important security related functions such as maintaining security at key choke points in places like malls and airports.

c) Predictive analytics

Delhi Police has started using predictive policing methods in conjunction with ISRO. The system that is being designed is called the Crime Mapping, Analytics and Predictive System. It provides police officials with Personal Digital Assistants for current access to information at crime scenes to reduce the burden of going back to police stations to file reports.

The web-based software is able to access data from Delhi Police's Dial 100 helpline and uses ISRO's satellite imagery to spatially locate 'hotspots' using clustering algorithms. Therefore, this software enables Delhi Police to predict when and where crime might occur and thereby deploy police forces to make

targeted interventions. Crime mapping is presently done at an interval of fifteen days. The reports are prepared by Joint Commissioners who forward it to the Special Commissioners.

Predictive Analytics in India has made some strides towards the use of big data analytics and algorithms for the purpose of processing vast tracts of data to generate predictive policing models. It is believed that, predictive policing technologies will be available in five states-Kerala, Odisha, Maharashtra, Haryana and Tripura.

4. Al Implementations in Education

In education, AI is predominately being used in decision making, student services, student progress monitoring, and personalized learning. Despite the diversity of languages in India, it does not appear that many solutions developed in this space are focusing on language. Machine learning appears to be the most commonly applied technique in the solutions.

a) Decision Making

US-based service provider HTC Global Services is focusing on launching products designed for the education space in India. These are web-based application that will enable students to make well informed decisions when choosing courses and electives at universities. This program will essentially use the same algorithms that enable people to make choices on e-commerce platforms by analysing past data with AI and machine learning.

b) Student Services

This would include solutions to hassles such as admission queries which are largely manual and take a considerable amount of time-both of the students and lecturers. Vishal Sethi, Global Practice Head-AI & Data Science has also mentioned that they are planning to launch an algorithm that can gauge the level of understanding by reading student expressions effectively.

c) Student Progress Monitoring

The previous Chandrababu Naidu-led government in Andhra Pradesh was collecting information from a variety of databases and processing the data through Microsoft's Machine Learning Platform to enable personalized monitoring of children and devote individualized attention to their progress, curbing school dropouts.

d) Personalized Learning

Ek-step is an open-learning platform that uses Application Programming Interfaces (API). The platform uses gamified applications available at Google Play Store. It has reportedly been utilised in over 10,000 government schools across Karnataka as of 2016. Further, the platform is available in five languages and across eighteen states. Recently, Co-Impact, which is a consortium of the 162 Capt Rahul Tiwari

world's leading philanthropists, including the Bill and Melinda Gates Foundation and the Rockefeller Foundation announced that it will be working with EkStep Foundation in the near future. The government also plans to work with them to launch the platform across the country.

5. Al Implementations in Defence

AI has led to a change in thinking at the strategic level, effecting a revolution in strategic affairs. But for efficient decision-making, there has to be a support system that provides the basis for further analysis.

a) Decision-making

In military parlance, this is classified as 'intelligence' received from a web of electronic sensors known as electronic intelligence ELINT and from human sources known (HUMINT). This very act of the collection, collation and classification of the intelligence received, can be done via algorithms through human supervised and unsupervised (self-trained) methods to provide commanders with the patterns of occurrence of events giving them a larger picture of the evolving situation for efficient decision-making.

b) Robot soldiers

The Centre for Artificial Intelligence and Robotics (CAIR), a laboratory linked with DRDO has been working on a project to develop a Multi Agent Robotics Framework (MARF). This seeks to galvanize multi-layered AI-powered architecture to develop an array of robots that can collaborate and function as a team, like human soldiers. Robots already built include a Wheeled Robot with Passive Suspension, a Snake Robot and a Robot Sentry indicating where the technology is headed.

c) Cyber Defence

The government is leveraging AI to strengthen and build cybersecurity capabilities. For example, CDAC in collaboration with IIT Patna is undertaking a project that seeks to develop cyber forensic tools driven by AI that can be leveraged by law enforcement, the government, and intelligence agencies. In India, the government has entered into a contract with 'Innefu' to analyse data they have obtained from intelligence agencies to evaluate threat patterns and predict future outcomes in their latest offering known as "Prophecy".

d) AI with Robotics

The Defence Research and Development Organizationis highly enagaged in AI technological activities., Indian army has DAKSH Robots that are used to defuse explosive that are categorized under Remotely operated vehicles (ROV)., There are more than 200 ROV in the Indian military sector.



References

- Artificial intelligence and the future of defence, Stephan De Spiegeleire, Matthijs Maas and Tim Sweijs, The Hague Centre for Strategic Studies (HCSS).
- "Autonomy and Artificial Intelligence: The Future Ingredient of Area Denial Strategy in Land Warfare", Debasis Das, (Manekshaw Paper no. 75, 2018)

"Future Warfare and Artificial Intelligence: The Visible Path" Atul Pant, IDSA. https://www.researchgate.net/publication/326774966.

- International Research Journal of Engineering and Technology (IRJET), e-Volume: 5 Issue: 6 June-2018www.irjet.net.
- "Slow and Steady: India's Tentative Steps into the AI Race" The Diplomat (newspaper), 14 July2018.

"Artificial Intelligence in Governance in India".(report), Arvind Basu.