ISSN (Online) : 2455 - 3662
SJIF Impact Factor :3.967

EPRA *International Journal of*

Multidisciplinary Research

Monthly Peer Reviewed & Indexed International Online Journal

Volume: 3 Issue: 9 september 2017

Published By :
EPRA Journals

CC License

AN ANALYTIC OF AUTOMOBILE THEFT IN INDIA

Anand Kumar Shrivastav[1]

[1]Research Scholar,
Department of Computer Application,
Faculty of Computer Science & System
Studies,
Mewar University, Chittorgarh,
Rajasthan, India

ABSTRACT

The automobile population in India is on the rise and so their theft. The automobile theft is now a lucrative venture with less risk and more profit. Despite all sort of advanced security features such as GPS, electronic locks and immobilizers etc., the thieves are successfully stealing the targeted vehicles. The automobiles are now being stolen by make and model on demand of customers. The Anti-Auto Theft Squads (AATS) of various States/UTs have not been successful enough in detecting the majority of the cases of automobile theft. The thieves require a window of 3-4 hours to dispose off a stolen automobile. The law enforcement agencies may track and trap the culprits within this time frame, provided they take help of any utility which enables them the power to coordinate stolen vehicles. One such utility is NCRB's Vahan Samanvay.

KEYWORDS: *Automobile Theft, Engine Control Module, National Crime Records Bureau, Onboard Diagnostic, Vehicle Identification Number.*

INTRODUCTION

Automobile theft is a commonly reported crime in many States and Union Territories of India. Motor vehicle theft makes up a fifth of all IPC crimes reported in Delhi. A vehicle is stolen every 13 minutes in Delhi (Times of India, 15 Apr 2016). The cars and SUVs are now being stolen on demand. Lack of deterrence has encouraged crooks so much that they are using advanced techniques to override the anti-theft mechanism. Thieves not only carry duplicate electronic keys but they can also swap out the ECM (Engine Control Module of the automobile in a few minutes.

While most of the police organization and researchers have come up with the profile and modus operandi of vehicle thieves, there is lack of research on the types of vehicles stolen, area from which stolen and areas where some of these vehicles recovered. This study examines the occurrence of automobile theft in an Indian perspective using data collected from police reports.

AUTOMOBILE AND AUTOMOBILE THEFT DEFINITION

The words Automobile, Motor vehicle or Vehicle are used interchangeably. The Business Dictionary defines automobile as a "Motorized vehicle consisting of four wheels and powered by an internal engine" (Business Dictionary). The Cambridge dictionary defines a vehicle as, "a machine, usually with wheels and an engine, used for transporting people or goods on land, especially on roads" (Cambridge Dictionary). The free dictionary defines a vehicle as, "A self-propelled passenger vehicle that usually has four wheels and an internal combustion engine, used for land transport" (The Free Dictionary).

Since all sort of vehicles irrespective of their number of wheels (except electric vehicle) are propelled by internal combustion engines which use petrol, diesel and gas as fuel, the definition of an automobile encompasses a range of vehicles starting from two wheelers to multi axle heavy vehicles.

Motor vehicle theft or grand theft auto is the criminal act of stealing or attempting to steal any

motor vehicle, usually an automobile (Wikipedia). According to the Federal Bureau of Investigation (FBI), motor vehicle theft is defined as the taking or attempted taking of a motor vehicle without permission of the owner (Federal Bureau of Investigation, 2010).

Indian Penal Code Section 378 defines theft as, "Whoever, intending to take dishonestly any moveable property out of the possession of any person without that person's consent, moves that property in order to such taking, is said to commit theft." According to Sec. 379 of the Indian Penal Code, "Whoever commits theft shall be punished with imprisonment of either description for a term which may extend to three years, or with fine, or with both" (Indian Penal Code).

THE MOTIVE

The literature survey shows that an automobile is stolen mainly for, (i) Fun, (ii) to commit another crime, and (iii) for income. Motor vehicle thefts for fun are committed mainly by youths for the thrill or to obtain status among their friends without any particular motive in mind. The second type of automobile theft involves theft of a motor vehicle to facilitate the commission of another crime. In this type of automobile theft, the vehicle is generally left abandoned after the crime. The automobile theft for income involves the sale of the vehicle in other location by forging documents and tampering with the identification marks of the vehicles such as registration number, engine number, and chassis number. Automobile theft for income also involves dismantling of vehicles into its parts for reuse or resale or to give a stolen vehicle a new identity. Auto theft for profit takes several typical forms, including the operation of "chop shops" that dismantle cars into collections of parts; the theft of vehicles for resale either locally or abroad; and the theft of vehicles to allow convenient "stripping" of selected parts in protected locations (Fleming, Brantingham, & Brantingham, 1994). The automobile, particularly Cars and SUV, having good resale value and whose parts are in demand attract thieves more.

INTERNATIONAL SCENARIO

Automobile theft is an International phenomenon. Increasing numbers of top-of-the-range vehicles are being stolen every day by thieves who simply drive off after bypassing security devices by hacking onboard computers. A report published in Daily Mail reads as, "Gangs using 'keyless' techniques are estimated to have stolen more than 6,000 vehicles in London alone last year – almost half of all cars and vans stolen. Most of the vehicles are broken down within hours before being loaded on to containers and shipped to Eastern Europe and Africa. Top-of-the-range BMWs and Range Rovers, as well as Ford Fiestas, Transit and Mercedes Sprinter vans, make up 70 per cent of all vehicles stolen in this way. Four-wheel-drive vehicles such as Range Rovers are among the most commonly targeted because they can be used in countries with poor roads" Dailymail, 04 Feb 2015). In Australia, 52,875 motor vehicles were reported stolen between April 2015 to March 2016; and 57,173 motor vehicles were reported stolen between April 16 to March 17 (National Motor Vehicle Theft Reduction Council). There were an estimated 707,758 thefts of motor vehicles nationwide in 2015.

The estimated rate of motor vehicle thefts was 220.2 per 100,000 inhabitants (Federal Bureau of Investigation, 2015). Property crimes resulted in losses estimated at $14.3 billion. The total value of reported stolen property (i.e., currency, jewelry, motor vehicles, electronics, and firearms) was $12,420,364,454 (FBI News, 26 September 2016).
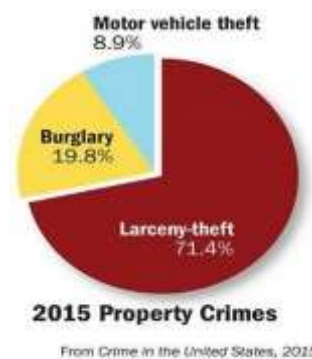
Figure-1

As of 2014, by theft, the United States of America was the top country in the world with 35.17 % of the world's theft (Figure-2). The world's total motor vehicle theft was estimated at 1.95 million in 2014 (Knoema World Data Atlas).
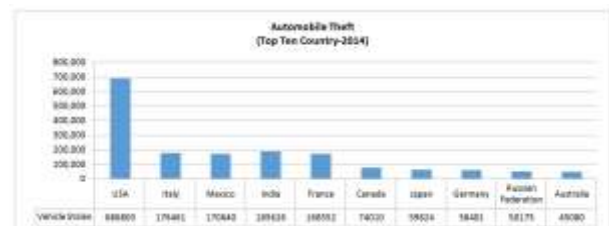
Figure-2

AUTOMOBILE POPULATION V/S THEFT IN INDIA

The Indian auto industry is one of the largest in the world. Moreover, the growing interest of the companies in exploring the rural markets further aided the growth of the sector (Brand Equity Foundation India). The Motor Vehicles Statistical Year Book India 2016 of Ministry of Statistics & Program Implementation also shows a continuous incremental trend in registered automobiles in India (Figure-3).

Figure-3

The automobile theft in the country has also increased with increasing number of automobiles in the country, which is obvious from the report, "Crime in India-2016" of National Crime Records Bureau (Figure-4). The Automobile theft has accounted for 42.6% (1,99,127 cases) of the total theft cases and there was an increase of 7.3% in the year 2015 in comparison to the year 2014 (1,85,626 cases). Theft other than automobile has shown an increase of 5.2% (from 2,55,289 in 2014 to 2,68,706 in 2015) during 2015 over 2014. The maximum auto thefts were registered in Delhi UT (32,729 cases) followed by Uttar Pradesh (29,846 cases), Maharashtra (21,468 cases), Rajasthan (18,141 cases) and Haryana (14,331 cases), accounting for 16.4%, 15.0%, 10.8%, 9.1% and 7.2% of total such cases registered at all India level respectively. Delhi UT has reported much

higher rate at 156.8 as compared to the national rate of 15.8 of auto thefts per 1,00,000 population.
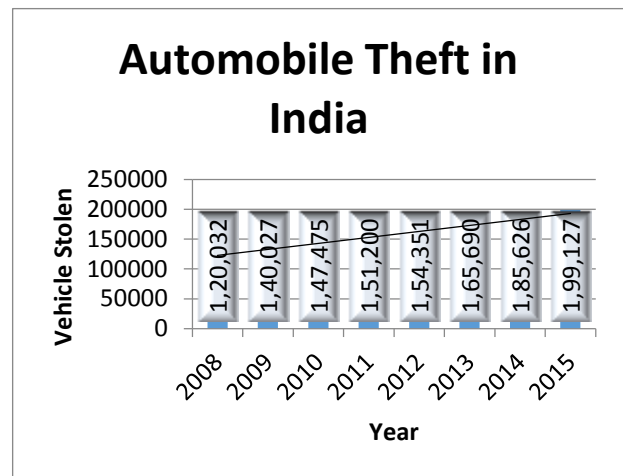

Figure-4

The top ten States/UT with the highest number of automobile theft is shown in Table-1. Delhi ranks top in highest number of automobile theft during 2015 followed by Uttar Pradesh and Maharashtra. Uttar Pradesh during four consecutive years from the year 2011 to 2014 recorded the highest number of automobile theft.

Table-1

Automobile Theft Top 10 States/UTs									
2011		2012		2013		2014		2015	
Uttar Pradesh	19955	Uttar Pradesh	21600	Uttar Pradesh	23916	Uttar Pradesh	28668	Delhi	33134
Maharashtra	19241	Maharashtra	17857	Maharashtra	18402	Delhi	23795	Uttar Pradesh	29314
Delhi	14812	Delhi UT	14446	Rajasthan	18286	Maharashtra	20284	Maharashtra	21656
Haryana	12655	Rajasthan	14130	Delhi	14936	Rajasthan	16958	Rajasthan	18129
Rajasthan	12431	Haryana	13036	Haryana	13587	Madhya Pradesh	15226	Madhya Pradesh	16047
Madhya Pradesh	11452	Madhya Pradesh	12253	Madhya Pradesh	13150	Haryana	14655	Haryana	14330
Karnataka	10472	Karnataka	9615	Karnataka	11180	Karnataka	9406	Karnataka	10106
Andhra Pradesh	9793	Gujarat	9156	Andhra Pradesh	9510	Bihar	8838	Bihar	9739
Gujarat	8960	Andhra Pradesh	8338	Gujarat	8669	Gujarat	8235	Gujarat	8204
Bihar	5270	Bihar	6464	Bihar	7777	West Bengal	5668	Telangana	4915

AUTOMOBILE RECOVERY

The statistics of stolen, recovered and coordinated automobile in India for the year 2010 to 2015 as depicted in Table-2 and Figure-5 shows that

only small numbers of stolen automobiles have been recovered and the coordinated automobiles were even less.

Table-2

Year	Lost	Recovered	Coordinated		Uncoordinated	
2010	145694	38201	9312	6.39 %	28889	75.62 %
2011	152010	41527	11111	7.30 %	30416	73.24 %
2012	155749	39760	15121	9.70 %	24639	61.96 %
2013	167838	39241	13700	8.16 %	25541	65.08 %
2014	186122	40819	25228	13.55 %	15591	38.19 %
2015	200227	43064	26010	12.99 %	17054	39.60 %

It is likely that recovered automobiles may not have been reported as stolen due to some reason. The large population of uncoordinated automobiles may be those vehicles, which have been either not reported stolen by their owners or their identification marks have been tampered with or erased.

Figure-5

METHODS AND TRICKS

The thieves adopt a variety of methods to steal a vehicle and it includes the getting a job at a motor workshop to collect information of a car or collect engine key combination data with the help of an employee. An unattended parked vehicle without key is stolen by breaking the glass followed by hot-wiring to start the vehicle or towing it to some safe place. Sometimes, criminal break into a vehicle and find the spare keys in the vehicle or an employee such as driver or security guard having possession of key drive the vehicle away. Some cars are stolen during a 'test drive'. The thieves by assaulting the owner or driver drive away with the vehicle. This is known as 'Carjacking'. Another type of theft is by the illegal acquisition of an automobile from a seller fraudulently by identity theft or loan obtained through false pretense. In order to evade detection, the thieves then resale the vehicle immediately.

Thieves are using very simple to extremely advanced tricks to get into a vehicle. They place a small coin in the door handle of a parked vehicle and when the owner drives it and park it at another location. The coin prevents locking of the car as it obstructs the locking system. After that, it is a matter of few seconds for a thief to open the door and drive away.

The automobile manufacturers are integrating microprocessors and other electronic devices to control various functions of an automobile including security alarm. The Engine Control Module (also called the Powertrain Control Module or PCM) is the brains of the engine management system. It controls the fuel mixture, ignition timing, variable cam timing and emissions control. It constantly monitors emissions performance via its OBD (Onboard Diagnostics) programming, and it oversees the operation of the fuel pump, engine cooling fan, and charging system. (Larry Carley, 2013).
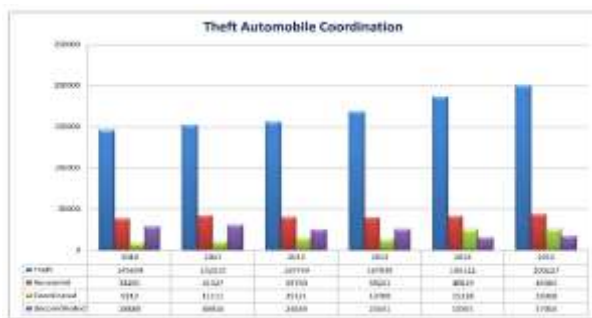
The use of high tech Onboard Diagnostic Port (OBD) key cloning kits, which is available online) to bypass immobilizer etc. by the thieves is common now. The OBD can retrieve VIN (Vehicle Identification No) of the automobile. The technique involves breaking into the vehicle and plugging a laptop into the hidden diagnostic socket used by garages to detect and solve faults. Once connected the thieves can access the vehicle's electronic information (Dailymail, 04 Feb 2015). With this information, thieves make a key that matches the ECM data allowing them to steal a car.

The thieves are also using a "mystery device" for carjacking. This is a two piece electronic device. The first piece senses the signal emitted from the automobile from a distance and when the signal is received, it is transferred to the second piece of the device, which is used to unlock the car and start it. According to 'Automotive News", such a device was tested on 25 new and used cars to unlock them and out of these 19 could be unlocked and the tester was able to drive away 18 out of 25 cars (Automotive News (7 December 2016). These devices can also pick the signal of the remote key while locking or unlocking the car.

METHODOLOGIES TO REDUCE THE OCCURRENCE OF AUTOMOBILE THEFT

One way to reduce the automobile theft is to identify the offenders and put them behind the bar. But, in order to deter the offenders, the prevailing criminal justice sanction seems not adequate. The automobile theft is normally a crime of chance. However, if an offender really wants to steal a vehicle, he will apply all possible techniques to get it regardless of the security measures. But with certain precautions and installation of anti-theft gadgets, one can discourage their attempts. It may involve the use of immobilizers, key operated switch to interrupt the power supply to ignition, Fuel cut-off to prevent the

flow of fuel to the engine, Steering lock, Gear lock and alerts about forced entry into the vehicle. In 1998, immobilizers were made mandatory on all new cars produced in the United Kingdom (Brown, R., & Thomas, N., 2003). There is strong empirical support for the security hypothesis from independent research into the drop in car theft in four countries, which suggests that it was caused by improved vehicle security, particularly electronic immobilizers and central deadlocking systems (Farrell, Nick Tilley, and Andromachi Tseloni, 2014).

HIGH SECURITY REGISTRATION PLATE

The Government of India, Ministry of Roads Transport and Highways, vide its Gazette Notifications: GSR 221 (E) dated 28.03.2001, SO No.814 (E) dated 22.08.2001 and SO No. 1041 (E) dated 16.10.2001 etc. had amended the Rule 50 of the Central Motor Vehicles Rules 1989, to introduce High-Security Registration Plates (HSRP) in India, for all types of Vehicles. The HSRP will maintain a uniform pattern of displaying automobiles registration number throughout the country. There are five safety features contained in the HSRP. These are (i) chromium base chakra hologram, (ii) 'India' incripted hot stamping foil, (iii) seven digit unique laser code, (iv) self-destructive windshield sticker and (v) non-removable snap lock features of a High-Security Number Plate includes. The details of all automobiles with HSRP is being maintained in a central database. With the use of laser detector cameras, the vehicles fitted with HSRP can be tracked on the go by detectors installed on intersections or hand held devices by police. The recognition of HSRP by cameras are based on a technology known as Automatic Number Plate Recognition (ANPR) which uses optical character recognition (OCR). The ANPR cameras once integrated with any centralized

automobile coordination system will act, as a sophisticated anti auto theft system and it will also create deterrence among the offenders.

NCRB's ANTI AUTO THEFT INITIATIVE

The Vahan Samanvay is an endeavor of National Crime Records Bureau to put a curb on the resale of stolen motor vehicles in India. This online software system was launched in the year 2014. Police, Motor Vehicle Registration Authorities, and Motor Insurance Companies are its stakeholders. The system has a public interface also. The stolen or a recovery status of an automobile can be obtained round the clock with the help of this system. The system instantly prompts in the case of a match when a police station feeds the particulars of a stolen or recovered vehicle into it. This system is very popular among citizen for verification of a pre-owned vehicle before its purchase. The number of enquiries also depicts the size of second-hand vehicle market and the consciousness of the prospective buyer.

Table-3

VAHAN SAMANVAY Online Automobile Verification Enquiry by Public	
Year	**Enquiry**
2014	6,82,418
2015	9,02,058
2016	10,33,412
2017 (up to 31st May)	4,37,823
Source: NCRB	

The comparison of automobile theft data of five States/UTs where the highest number of automobile theft was recorded shows that the Vahan Samanvay System is underutilized by the police. In other States/UTs, the situation is more or less similar.

Table-4

Stolen Automobile Data Status: Actual Vs Vahan Samanvay							
		2014		**2015**		**2016**	
S.N.	**State/UT**	**Actual**	**Vahan Samanvay**	**Actual**	**Vahan Samanvay**	**Actual**	**Vahan Samanvay**
1	Delhi	23795	15710	33134	26853	38644*	12213
2	Uttar Pradesh	28668	12512	29314	21272	--	26393
3	Maharashtra	20284	1024	21656	2608	--	3027
4	Madhya Pradesh	15226	4544	16047	5418	--	5313
5	Rajasthan	16958	13898	18129	12761	--	13583
Source: NCRB; * Source: Delhi Police (http://www.delhipolice.nic.in/PDF/CRIME%20IN_%20DELHI.pdf)							

In order to dispose of a stolen vehicle, thieves need a window of 3-4 hours. Using expert hands and equipment, a vehicle is dismantled in no time, and the chances of its being traced thereafter are practically impossible. In case the details of the vehicle are entered soon after the occurrence of theft, the tracking of the vehicle at any check point is very

easy as the vehicle's status can be verified instantly even with the help of a smart phone also. The use of online Vahan Samanvay System can definitely reduce the occurrence of automobile theft and enhance the coordination, thereby reducing the quantum of uncoordinated automobiles. This will also reduce the burden on Motor Insurance Companies.

CONCLUSION

The automobile theft across the world is rampant. Even the most developed countries are facing this challenge. The automobile population in India have also increased manifold in past few years and so the incidents of auto theft. While many of the stolen automobiles are sold in far flung areas of the country, others are dismantled for parts. The present study shows that only a fraction of stolen automobiles are coordinated. A large number of recovered automobiles remain uncoordinated due to the reasons that either their identification marks are found to be tampered with or their stolen report is not disseminated. The best way of dissemination of automobile theft (or recovered) information is to put the details on a centralized database that is accessible to all stakeholders. One such database in the form of "Vahan Samanvay" is already available, but it seems to be underutilized. The safety measures, such as installation of safety gadgets like an electronic key, engine immobilizer, gear lock, steering lock and parking of vehicles at a safe place, are required to be taken by the automobile owners. The High-Security Number Plate (HSRP) is an initiative taken by Government of India. The biggest safety feature enabled in the HSRP is its unique seven digit laser code which can be scanned by a laser detector camera to identify the number plate. Until these laser detector cameras are not installed, this safety feature of HSRP will be useless. The laser detector cameras integrated with a centralized automobile coordination system, such as Vahan Samanvay, may become a powerful tool against automobile theft. However, like any other database, it is desirable that the details of each automobile theft are updated in the database immediately. All concerned agencies are required to be sensitized in this regard. The curb on automobile theft may also have an impact on other crimes where stolen vehicles are used.

REFERENCES

1. *Automotive News (7 December 2016). Retrieved on 01 July 2017 from http://www.autonews.com/article/20161207/RETAIL04/161209877/mystery-device-helps-thieves-steal-cars-with-push-button-ignitions*
2. *Brown, R., & Thomas, N. (2003), Aging vehicles: Evidence of the effectiveness of new car security from the Home Office Car Theft Index. Security Journal, 16(3): 45-53.*
3. *Brand Equity Foundation India, Automobile Industry in India. Retrieved 21 June 2017 from https://www.ibef.org/industry/india-automobiles.aspx*
4. *Business Dictionary. Retrieved 22 June 2017 from http://www.businessdictionary.com/definition/automobile.html*
5. *Cambridge Dictionary. Retrieved 22 June 2017 from http://dictionary.cambridge.org/dictionary/english/vehicle*
6. *Dailymail (04 Feb 2015). Retrieved 05 July 2017 from http://www.dailymail.co.uk/news/article-2938793/Car-hackers-driving-motors-Increasing-numbers-stolen-thieves-simply-bypass-security-devices.html#ixzz4jybcMPba*
7. *FBI News (26 September 2016). Retrieved 05 July 2017 from https://www.fbi.gov/news/stories/latest-crime-statistics-released*
8. *Federal Bureau of Investigation. Retrieved 03 July 2017 from https://ucr.fbi.gov/crime-in-the-u.s/2010/crime-in-the-u.s.-2010/property-crime/mvtheftmain*
9. *Federal Bureau of Investigation. Retrieved 01 July 2017 from https://ucr.fbi.gov/crime-in-the-u.s/2015/crime-in-the-u.s.-2015/offenses-known-to-law-enforcement/motor-vehicle-theft*
10. *Fleming, Brantingham, & Brantingham (1994), Exploring Auto Theft in British Columbia, Crime Prevention Studies, vol. 3, pp.47 − 90. New York: Criminal Justice Press,*
11. *Graham Farrell, Nick Tilley, and Andromachi Tseloni (2014), "Why the Crime Drop?" Crime and Justice 43]*
12. *Indian Penal Code*
13. *Knoema World Data Atlas. Retrieved 24 June 2017 from https://knoema.com/atlas/topics/Crime-Statistics/Burglary-Car-Theft-and-Housebreaking/Theft-Motor-Vehicle?action=export&gadget=tranking-container*
14. *Larry Carley (2013), Engine Control Module: The Brains of the Operation, Retrieved on 01 July 2017 from http://www.counterman.com/engine-control-module-the-brains-of-the-operation*
15. *Ministry of Statistics and Programme Implementation, Motor Vehicle - Statistical Year Book India 2016. Retrieved 22 June 2017 from http://www.mospi.gov.in/statistical-year-book-india/2016/189.*
16. *National Crime Records Bureau (2016). Crime in India 2015. Retrieved from http://ncrb.nic.in/StatPublications/CII/CII2015/cii2015.asp*
17. *National Motor Vehicle Theft Reduction Council. Retrieved 03 July 2017 from https://carsafe.com.au*
18. *The Free Dictionary. Retrieved 22 June 2017 from http://www.thefreedictionary.com/Car+Automobile*
19. *Times of India (15 Apr, 2016). Retrieved 03 July 2017 from http://timesofindia.indiatimes.com/city/delhi/A-vehicle-is-stolen-every-13-mins-in-Delhi-rate-up-44-since-last-yr/articleshow/51836205.cms*
20. *Wikipedia. Retrieved 21 June 2017 from https://en.wikipedia.org/wiki/Motor_vehicle_theft.*