

## **Analysis Of Indian Cybercrime Dataset For Age Demography**

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### **Abstract**

India was ranked second in terms of internet usage globally. Though Internet based technologies had brought innovation and comfort in many aspects it has it's darker side that is not so impressive. This paper gives on account of Internet based crimes of various states of India, crime categorization and relationship of state wise cyber crime with various age groups with authentic data throwing light on darker side in usage of Internet based technologies. It is fascinating and imperative finding that as usage Internet increases there will be increase in Internet based crimes. Thus paper highlights the importance of Cyber security to moderate adverse effects of usage of innovative services of Internet.

### **Introduction**

Recently, India was ranked second in terms of internet usage globally. As per the data from Internet and Mobile Association of India (IAMAI), the number of claimed internet users have increased by 29 percentage in urban India and 33 percentage in rural India as on october 2014 report. The growth of the Internet has brought substantial changes in terms of education, logistics and convenience of shopping with click of the button. However any innovation in technology is a double edged sword, if not handled properly would result in adverse consequences. Social media and messaging platforms in the cyberspace provide a comfortable and strong medium in meeting and socializing with friends as well as strangers. The darker side of the cyberspace seems not so impressive with its massive crime records and its categories.

This paper deals gives an analytical view of cybercrime pattern in India.

## Literature Review

Online crime was sporadic at earlier point of time but with increase in internet usage and its accessibility , it is becoming organised and strong making the current enforcement efforts feeble.

Phising , Fradulent websites and Abusive content form the basic threat in the cyber space.

Failure of security systems of the website form the technical loophole for the cyber crimials.( Tyler Moore et al , 2009). Impersonation forms the other major threat with the increased usage of the social media leads to tampering of the individual.( Dr. hiyam).At company level ,the educating the top management regarding the cybercrime prevention becomes mandatory to prevent crime.( AMNA ALMADHOOB ,RAUL VALVERDE,2014).A deep understanding of cybercrime would enable us to have better preacutions in carrying out safe transaction in the webspace.( Nir Kshetri).Adequate training and discussions among the police officers and regular updates would help us to suppress cybercrime. It also important how police officers perceive the cybercrime challenge(Thomas J. Holt, Adam M. Bossler).

## Methodology

Dataset was obtained from the open government data (OGD) Platform of India under the catalog of Ministry of Home Affairs ,National Crime records Bureau. The data set has the state wise data under various section from the year 2008 to 2012.

## Analysis & Interpretation

From the data collected from the source, a database of Year wise State wise data was extracted.

Further based on the total number of crimes committed from 2008 – 2012 was calculated. Based on the total number of crimes, the states were ranked below.

**Table 1-State Wise Cybercrime Ranking (Based On 2008 – 2012 Data)**

Rank	STATE/UT	2008	2009	2010	2011	2012	Grand Total
1	MAHARASHTRA	120	334	411	622	814	2301
2	ANDHRA PRADESH	220	24	414	534	478	1670
3	KERALA	64	94	218	280	350	1006
4	UTTAR PRADESH	8	62	176	318	370	934
5	MADHYA PRADESH	16	52	118	206	394	786
6	PUNJAB	112	130	152	118	176	688
7	RAJASTHAN	2	44	76	264	188	574
8	CHHATTISGARH	50	102	102	208	72	534
9	KARNATAKA	12	42	234	78	160	526
10	GUJARAT	42	72	126	110	160	510

From the data collected from the source, a database of various sections in which the particular crime falls as per the law was extracted. The following table gives an idea about the pattern of crime and their vulnerability.

**Table 2- Crime Section Wise Grouping**

CRIME HEAD	NO. OF CASES (FROM 2008-2012)
BREACH OF CONFIDENTIALITY OR PRIVACY (SECTION 72 IT ACT)	252
COUNTERFEITING - CURRENCY OR STAMPS (SECTION 489A TO 489E IPC)	225
COUNTERFEITING - PROPERTY OR MARK (SECTION 482, 183, 483, 484, 485 IPC)	138
COUNTERFEITING - TAMPERING (SECTION 489 IPC)	135
CRIMINAL BREACH OF TRUST OR FRAUD (SECTION 405, 406, 408, 409 IPC)	1857
CYBER-CRIME RELATED IPC SECTIONS	5541
DESTRUCTION OF ELECTRONIC EVIDENCE (SECTION 204, 477 IPC)	78
FAILURE - OF COMPLIANCE OR ORDERS OF CERTIFYING AUTHORITY (SECTION 68 IT ACT)	63
FAILURE - TO ASSIST IN DECRYPTING THE INFORMATION INTERCEPTED BY GOVT AGENCY (SECTION 69 IT ACT)	9
FALSE ELECTRONIC EVIDENCE (SECTION 193 IPC)	21
FORGERY (SECTION 463, 465, 466, 468, 469, 471, 474, 476, 477A IPC)	3057
FRAUD DIGITAL SIGNATURE CERTIFICATE (SECTION 74 IT ACT)	63
HACKING (SECTION 66(2) IT ACT)	966
LOSS OR DAMAGE TO COMPUTER RESOURCE OR UTILITY (SECTION 66(1) IT ACT)	4308
OBSCENE PUBLICATION OR TRANSMISSION IN ELECTRONIC FORM (SECTION 67 IT ACT)	4596
OBTAINING LICENCE OR DIGITAL SIGNATURE CERTIFICATE BY MISREPRESENTATION OR SUPPRESSION OF FACT (SECTION 71 IT ACT)	30
OFFENCES BY OR AGAINST PUBLIC SERVANT (SECTION 167, 172, 173, 175 IPC)	21
PUBLISHING FALSE DIGITAL SIGNATURE CERTIFICATE (SECTION 73 IT ACT)	9
TAMPERING COMPUTER SOURCE DOCUMENTS (SECTION 65 IT ACT)	843
UN-AUTHORISED ACCESS OR ATTEMPT TO ACCESS TO PROTECTED COMPUTER SYSTEM (SECTION 70 IT ACT)	117

From the data collected, age wise crime list was extracted. We could find that a total of 282 crime has been recorded from 2008-2012 under 18 years of age category. This shows the negative impact of internet among children and teenagers. The following table is the State wise ranking of online crime for below 18 years of age category.

**Table 3** State Wise Online Crime Based On Age Category

AGE : BELOW 18 YEARS		
Rank	State	No. of crime
1	MAHARASHTRA	54
2	MADHYA PRADESH	48
3	KERALA	46
4	CHHATTISGARH	38
5	RAJASTHAN	28
6	ANDHRA PRADESH	16
7	UTTAR PRADESH	14
8	KARNATAKA	12
9	HIMACHAL PRADESH	6
10	DELHI	4

When we look at the online crime records between 18 to 30 years age category, its an alarming 6173 crime which is of highest importance. People between these age groups are college students and working youth. Proactive steps for engaging this age group has to be taken , if not there might me an increase in the number of crime. The following table is the statewise ranking of crimes for 18 to 30 years age category.

**Table 4** State Wise Crime Ranking Based On 18-30 Years Age Category

AGE: 18 TO 30 YEARS		
RANK	State	No. of Crimes
1	MAHARASHTRA	1347
2	ANDHRA PRADESH	750
3	KERALA	568
4	MADHYA PRADESH	534
5	UTTAR PRADESH	466
6	RAJASTHAN	360
7	KARNATAKA	308
8	GUJARAT	288
9	PUNJAB	250
10	CHHATTISGARH	228

When we extract the crime records for the 30 to 45 years age category with 4143 crime records , it forms the second highest age category. The following table gives the state wise ranking of online crime for the 30 to 45 years age category.

**Table 5 :**State Wise Crime Ranking Based On 18-30 Years Age Category

AGE : 30 TO 45 YEARS		
Rank	State	No. of Crimes
1	MAHARASHTRA	701
2	ANDHRA PRADESH	690
3	UTTAR PRADESH	392
4	PUNJAB	372
5	KERALA	336
6	CHHATTISGARH	200
7	MADHYA PRADESH	190
8	KARNATAKA	174
9	GUJARAT	162
10	RAJASTHAN	152

When we extract the crime records of above 60 years age category, it is a shocking 66 crimes. We could find that it becomes important to monitor this age category , even though people of this age are matured and with rich experience abut life.

**Table 6 :** State Wise Crime Ranking Based On Above 60 Years Age Category

Age Above 60 years		
S.No	State	No. of Crimes
1	HARYANA	12
2	CHHATTISGARH	10
3	MAHARASHTRA	8
4	TAMIL NADU	8
5	GUJARAT	4
6	KARNATAKA	4
7	ORISSA	4
8	PUNJAB	4
9	ANDHRA PRADESH	2
10	CHANDIGARH	2
11	DELHI	2
12	MADHYA PRADESH	2
13	RAJASTHAN	2
14	UTTAR PRADESH	2

Correlation Analysis:

Ho : There is no significant relationship between online crime and Internet usage  
 H1: There is significant relationship between online crime and Internet usage

**Table 7:** Crime And Internet Usage

	2009	2010	2011	2012
No. of Crime	1102	2383	3260	4142
Internet Usage	14.64	17.37	20.84	22.17

**Table 7a:** Correlation Analysis For Crime And Internet Usage

		no_of_crime	internet_usage
no_of_crime	Pearson Correlation	1	.988*
	Sig. (2-tailed)		.012
	N	4	4
internet_usage	Pearson Correlation	.988*	1
	Sig. (2-tailed)	.012	
	N	4	4

\*. Correlation is significant at the 0.05 level (2-tailed).

## Conclusion

From the analysis , we could find that with increasing internet usage the cybercrime keeps increasing. So every service provider must make their customers aware about the cyber security Protocols.

Awareness about the parental control software must be made mandatory to the parents of school kids. Colleges and universities must engage the students with positive tasks. A robust security protocol has to be followed in the implementation of Internet Infrastructure at campus.

Ethical hacking must be promoted in companies to check the vulnerability of attacks. Information security procedures must be made stringent in organization. Awareness of Malwares, Virus and Phising must be promoted within the organization

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