

Usages of Selected Antivirus Software in Different Categories of Users in selected Districts

Dr. Bhaskar V. Patil¹, Dr. Milind. J. Joshi²

Bharati Vidyapeeth University Yashwantrao Mohite institute of Management, Karad [M.S.], India¹

Shivaji University Kolhapur, Kolhapur [M.S.], India²

Abstract: A computer virus is software intentionally written to copy itself without the computer owner's permission and then perform some other action on any system where it resides. Now a days, viruses are being written for almost every computing platform Anti-virus protection is, or should be, an integral part of any Information Systems operation, be it personal or professional. There are number of computer virus are created and these computer virus are affected in day today life. The large number of Anti-virus software available in the market and some are being launched, each one of them offers new features for detecting and eradicating viruses and malware. People frequently change their Anti-virus software according to their liking and needs without evaluating the performance and capabilities of the various Anti-virus software available. This research paper highlights the popular antivirus software in different types of users with types of antivirus software in selected Districts.

Keywords: Network, Virus, Security threats, Attack of Computer Virus, Performance Indicator, Freeware, Licensed

I. INTRODUCTION

Now a day's computers are very essential part of our life. The uses of computer are increased day by day. A computer people can share information from one computer to another computer with the help of device or media. In the current days there are various ways or method for sharing information because people can carry several gigabytes or terabyte of data from one destination to another destination. We also know history and which devices are used to exchange information in the world. There are several ways a user can go about copying data from one computer to another computer. In the process of exchanging the information using communication media there will be a problem of attack of malware or computer virus.^[1] a computer virus is a computer program that can spread across computers and networks by making copies of itself, usually without the user's knowledge. Viruses are capable of displaying different messages, denying all kinds of access, data thefts, changes in valuable data or files, deleting systems or any files, or it disable hardware. Therefore, an early detection and prevention mechanism is very important

for the security of the computer. Anti-virus software is a critical link in overall security chain, protecting organization's computers from many types of viruses, including worms and Trojan horses. Using anti-virus software is a good way to detect viruses and it is advisable to use anti-virus software on network operating systems and workstations for adequate protection. Anti-virus software is specifically written to defend a system against the threats that malware presents. Anti-virus software may work differently and ranges from large security packages to small programs designed to handle a specific virus.^[2]

The large number of anti-virus software available in the market and some are being launched, each one of them offers new features for detecting and eradicating viruses and malware. Therefore people have a choice of different types of anti-virus i.e. Both in the form of freeware software or licensed software. People frequently change their anti-virus software according to their liking and needs without evaluating the performance and capabilities of the various anti-virus software available. Hence there is

a need to find parameter for measuring performance of anti-virus software for finding good and also suitable for the specific needs of the users. [3]

II. WORKING OF ANTI-VIRUS SOFTWARE

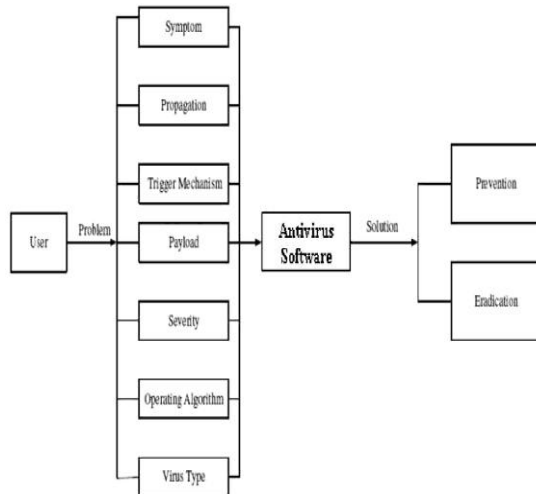


Fig 2.1: Prevention from different attack

The use of computers and Internet are increasing day by day for different purposes with more and more users. At the same time these computers and networks are facing number of problems posed by malicious codes like virus, Trojan, etc. The problems which are shown in the above figure [Fig 2.1: Prevention from different attack] which are Symptoms, Propagation, Trigger Mechanism, Payload, Security, Operating algorithm, Virus types discussed in chapter III. These different problems are analyzed by Anti-virus software programs, which provide solutions for prevention and eradication of computer viruses. [5][6][7]

III. KEY PERFORMANCE INDICATOR OF ANTI-VIRUS SOFTWARE

There are different key performance indicators identified for measuring the performance of Anti-virus software which are as follow, [5] [6] [7] [8]

A. Virus Definition Update - Everyday as you surf the Internet or download files, your computer is susceptible to spy ware, malware, viruses, Trojans and other threats designed to deter computer performance.

Anti-virus programs are security tools designed to combat these threats as they arise.

B. Anti-virus Upgrades - Anti-virus programs also may become need to be upgraded. Even if you are fully up-to-date on your Anti-virus updates, you may want to keep the software itself fully updated to the latest version, so allow your software to automatically update.

C. On-Access Scanner - The purpose of the On-Access Scanner is to scan files and folders as they are being accessed and catch any infections. To that end, in order to function properly, the scanner must constantly run in the background of your computer.

D. On-Demand Scan - This option enables you to scan just a specific folder or multiple folders. The purpose of this option is to scan particular drive, folder or files specially.

E. Scheduled Scanning - It is possible to schedule a scan to be carried out automatically when the system restarts i.e. when it "boots", before the operating system is active.

F. Auto Clean Infected File Scanning - This will scan any removable media that is attached to your computer e.g. USB flash drives, external hard drives etc.

G. Scanning of Compressed Files - Virus Scan Engine can extract and scan files in multiple layers of compression. It supports a wide variety of decompression types and encoding formats.

H. File sharing (P2P) shield - Checks files downloaded using common file sharing (peer-to-peer) programs.

I. Email shield - Checks incoming and outgoing email messages and will stop any messages containing a possible virus infection from being accepted or sent.

J. Heuristic analysis - It is basically used to evaluate unknown and suspicious objects by simulating the object's behavior in a safe virtual computer environment. This allows detection of malicious code not yet described in the virus database.

K. IM shield - Checks files downloaded by instant messaging or "chat" programs.

L. Script shield - Detects malicious scripts and prevents them from being run. The script shield will detect and block not only malicious scripts coming from the web (remote threats) but also scripts coming from other sources, such as web pages saved to disk or in the browser cache etc (local threats).

M. Web shield - Protects your computer from viruses while using the internet (browsing, downloading files etc). It will detect and block known or potential threats coming from the web e.g. hacked web pages infected with (potential or actual) malicious scripts.

N. Anti-virus Technical Support - Our expert team of Anti-virus support specialists will make sure your Anti-virus software is up to date and not only that they will make sure your computer is free of all viruses and malware and ensure your PC is secure. 247Techies provides the best Anti-virus technical support services.

O. Password Protected Setting - On this screen you can specify a password which the user will be prompted to enter when trying to run Anti-virus software, or when trying to access certain parts of the program.

IV. POPULAR DIFFERENT TYPES OF ANTIVIRUS SOFTWARE

The study aims at collecting data from the users of Anti-virus software. Therefore; invariably all the people using a computer used an Anti-virus software. The entire users of computers comprise the universe for the study. A study of data of users of Anti-virus software maintained by various Anti-virus software companies and their vendors, it has revealed that there are broadly 9-10 types of users, mentioned in bellow table no 1.1 [Table No.4.1: Sample size of districts, and Anti-virus Software Users].

Bellow table gives information about district wise Anti-virus software users in Sangli and Kolhapur districts of geographical scope considered for this study. Researcher undertaken study of these users of Anti-virus software, hence only registered user of Anti-virus software are

considered for deciding sample and total 574 users out of 2708 are selected as samples.

Table No. 4.1: Sample size of districts, and Anti-virus Software Users

Anti-virus Name	Total	Precent
AVG	42	7.32 %
Kaspersky	44	7.67 %
McAfee	46	8.01 %
Norton	55	9.54 %
NPAV	189	32.93 %
Quick Heal	140	24.39 %
Other	58	10.10 %
Grand Total	574	100

Table No. 4.2 – Use of Different Anti-virus Software

Sr. No.	Anti-virus Software Users	Sangli District		Kolhapur District		Sample Units
		Total Units	Sample Units	Total Units	Sample Units	
1	Banks	31	3	45	5	8
2	Coaching Classes	95	10	135	14	24
3	Educational Institutions	127	13	180	18	31
4	Government Office	130	13	248	25	38
5	Hotel and Travel & Tourism Businesses	51	5	169	17	22
6	Industry	105	11	126	13	24
7	Internet Cafés	345	35	370	37	72
8	Professionals	182	18	369	27	45
9	Students	-	130	-	180	310
Total		1066	238 [10%]	1642	336 [10%]	574

Fig No. 4.2 – Use of Different Anti-virus Software

Therefore it can be inferred that NPAV [32.93%] and Quick Heal [24.39%] are the most popular Anti-virus software that are being used by the different category of users.

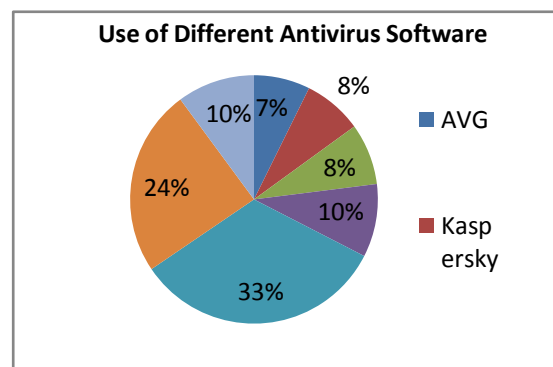


Table No. 4.3 – Different Anti-virus Software used by various categories of Users

User Type Name	Antivirus Name							Grand Total
	Quick Heal	Norton	AVG	Kaspersky	McAfee	NPAV	Other	
Banks	1 [12.50%]	7 [87.50%]	0	0	0	0	0	8
Coaching Classes	11 [45.83%]	4 [16.67%]	2 [8.33%]	2 [8.33%]	3 [12.50%]	1 [4.17%]	1 [4.17%]	24
Educational Institutions	12 [38.71%]	4 [12.90%]	0	0	0	14 [45.16%]	1 [3.23%]	31
Government Office	18 [47.37%]	7 [18.42%]	0	2 [5.26%]	0	11 [28.95%]	0	38
Hotel and Travel & Tourism Businesses	13 [59.09%]	0	0	4 [18.18%]	2 [9.09%]	2 [9.09%]	1 [4.55%]	22
Industry	10 [41.67%]	4 [16.67%]	2 [8.33%]	1 [4.17%]	1 [4.17%]	5 [20.83%]	1 [4.17%]	24
Internet Cafes	21 [29.17%]	14 [19.44%]	6 [8.33%]	3 [4.17%]	5 [6.94%]	13 [18.06%]	10 [13.89%]	72
Professionals	17 [37.78%]	0	3 [6.67%]	8 [17.78%]	0	14 [31.11%]	3 [6.67%]	45
Students	37 [11.94%]	15 [4.84%]	29 [9.35%]	24 [7.74%]	35 [11.29%]	129 [41.61%]	41 [13.23%]	310
Grand Total	140 [24.39%]	55 [9.58%]	42 [7.32%]	44 [7.67%]	46 [8.01%]	189 [32.93%]	58 [10.10%]	574

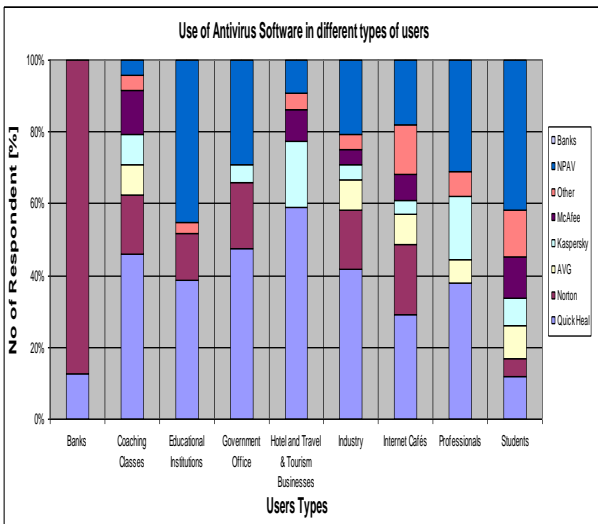


Fig. 4.3 – Different Anti-virus Software used by various categories of Users

Therefore it can be inferred that NPAV [32.93%] and Quick Heal [24.39%] are the two most popular Anti-virus software that are being used by the different category of users.

Table No. 4.4 – Use of Different Anti-virus Software with Their Different Types

Anti-virus Name	Home Edition	Internet Security	Professional	Total Security	Grand Total
AVG	29 [69.05%]	1 [2.38%]	7 [16.67%]	5 [11.90%]	42
Kaspersky	14 [31.82%]	9 [20.45%]	7 [15.91%]	14 [31.82%]	44
McAfee	19 [41.30%]	0	8 [17.39%]	19 [41.30%]	46
Norton	10 [18.18%]	10 [18.18%]	14 [25.45%]	21 [38.18%]	55
NPAV	103 [54.50%]	35 [18.52%]	0	51 [26.98%]	189
Quick Heal	17 [12.14%]	16 [11.43%]	13 [9.29%]	94 [67.14%]	140
Other	36 [62.07%]	7 [12.07%]	6 [10.34%]	9 [15.52%]	58
Grand Total	228 [39.72%]	78 [13.59%]	55 [9.58%]	213 [37.11%]	574

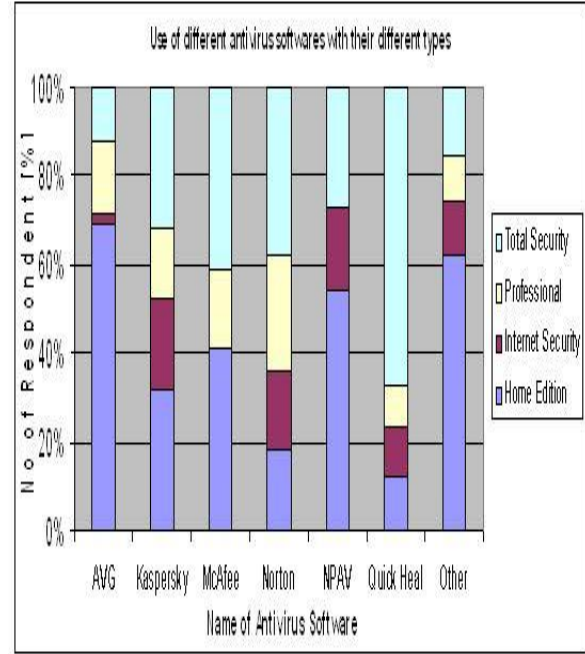


Chart. 4.4 – Use of Different Anti-virus Software with Their Different Types

Therefore it can be inferred that Home edition [39.72%] and Total security [37.11%] are the two most popular Anti-virus software types that are being used by the all the different category of users.

Table No. 4.5 – District Wise Use of Different Anti-virus Software with Their Different Types

Antivirus Name	District	Home Edition	Internet Security	Professional	Total Security	Grand Total
AVG	Kolhapur	20 [76.92%]	0	3 [1.54%]	2 [7.69%]	26
	Sangli	9 [36.25%]	1 [6.25%]	4 [25%]	3 [18.75%]	16
Kaspersky	Kolhapur	12 [31.58%]	9 [23.68%]	5 [13.16%]	12 [31.58%]	38
	Sangli	2 [33.33%]	0	2 [33.33%]	2 [33.33%]	6
McAfee	Kolhapur	8 [30.77%]	0	6 [23.08%]	12 [46.15%]	26
	Sangli	11 [55.00%]	0	2 [10%]	7 [35%]	20
Norton	Kolhapur	7 [20.00%]	7 [20.00%]	8 [22.86%]	13 [37.14%]	35
	Sangli	3 [15.00%]	3 [10.75%]	6 [30%]	8 [40%]	20
NPAV	Kolhapur	46 [54.76%]	14 [12.77%]	0	24 [28.57%]	84
	Sangli	57 [54.29%]	21 [20.00%]	0	27 [25.71%]	105
Quick Heal	Kolhapur	14 [15.05%]	10 [10.75%]	8 [8.60%]	61 [65.59%]	93
	Sangli	3 [6.38%]	6 [12.77%]	5 [10.64%]	33 [70.21%]	47
Other	Kolhapur	21 [60.00%]	7 [20.00%]	2 [5.71%]	5 [14.29%]	35
	Sangli	15 [65.22%]	0	4 [17.39%]	4 [17.39%]	23
Grand Total		228 [39.72%]	78 [13.59%]	55 [9.58%]	213 [37.11%]	574

It can be inferred that Home edition [39.72%] and Total security [37.11%] are the two most popular Anti-virus software that are being used by the all the different category of user in Kolhapur and Sangli district.

Table No. 4.5 - Use of Licensed and Trial Anti-virus Software in Different User Types

User Type Name	Licensed	Trial	Grand Total
Bank	8 [100%]	0	8
Coaching Classes	15 [62.50%]	9 [37.50%]	24
Educational Institutions	30 [96.77%]	1 [3.23%]	31
Government Office	35 [92.11%]	3 [7.89%]	38
Hotel and Travel & Tourism Businesses	22 [100%]	0	22
Industry	20 [83.33%]	4 [16.67%]	24
Internet cafés	56 [77.28%]	16 [22.22%]	72
Professionals	42 [93.33%]	3 [6.67%]	45
Students	2 [59.68%]	125 [40.32%]	310
Grand Total	413 [71.95%]	161 [28.05%]	574

Therefore it can be inferred that majority of the users prefer licensed copies Anti-virus software.

CONCLUSION

The antivirus software objective is to behind the viral protection programs is to secure the system using these 3 tasks; take preventive measure, detection of the malicious code, eradication. There are six different brands of anti-virus software that are being used by the various categories of users in the selected area. The study reveals that NPAV and quick heal are the two most popular anti-virus software brands being used by different categories of users. However it is also revealed that the Norton brand of anti-virus software is used by majority of the banks on account of its reliability and dependability for secured transaction on the network. Quick heal brand of anti-virus software is being used by majority of the coaching classes, government offices, hotel and travel tourism businesses and the industries. Majority of users of NPAV brand are students, educational institutions and professionals.

ACKNOWLEDGMENT

The researchers are grateful to the authors, writers, and editors of the books and articles, which have been referred for preparing the presented research paper. It is the duty of researcher to remember their parents whose blessings are always with them.

REFERENCES

- [1] Paul Mobbs, Computer Viruses, Association for Progressive Communications, March 2002.
- [2] Jacob M. Rutledge, Research report Virus, 2010
- [3] Thomas M. Chen, Trends in Viruses and Worms, The Internet Protocol Journal, 23-33
- [4] Kiran Karki, Malik H Muzaffar, Virus and Antivirus
- [5] Choosing Anti-virus Software, Software Security Solutions, Information Security for Small and Medium-Sized Businesses, 2007
- [6] Olivier Henchiri, Nathalie Japkowicz, A Feature Selection and Evaluation Scheme for Computer Virus Detection, International Conference on Data Mining (2006), pp. 891-895
- [7] Hsien-Chou Liao and Yi-Hsiang Wang, A Memory Symptom-based Virus Detection Approach, International Journal of Network Security, Vol.2, No.3, PP.219-227, May 2006
- [8] Roberto Dillon , A simple guide to Computer Viruses and other dangerous little programs - An Introduction to an Effective Defense, International journal of law and technology, Program and Play - Roberto Dillon, 2007

BIOGRAPHIES



Dr. Prof. Milind J. Joshi is a Systems Programmer and Co-ordinator, Internet Unit. His educational qualifications are M.Com., M.C.M., Ph.D. (Computer Management). He is guided currently 06 Ph.D. Students, 01 M.Phil. Students and Co-guide for 02 students. Total number of

research papers published is 27 and 01 Book on "MIS for University Administration". He has 24 years at Computer Centre of Shivaji University, Kolhapur. He is member of special technical committee, digital university project by Shivaji University, Kolhapur.



Dr. Bhaskar V. Patil completed his B.Sc., M.C.A and Ph.D. (Computer Application) from Shivaji University, Kolhapur. He is working as assistant professor in Bharati Vidyapeeth University Yashwantrao Mohite institute of Management, Karad [M.S.], INDIA. His publications are 05. He attended 08

Workshops.