

Software Piracy among IT students of J&K: Ethical or Unethical

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ABSTRACT

Software piracy committed by university students in the metro states of India has been published widely in various computer literatures. However very little has been reported about why and what proportion of students, particularly IT students, in a Northern State like J&K, uses pirated software. In this paper a survey was conducted among the computer science students of different educational institutions of J&K. In this paper the use of pirated software with fourteen issues related to demographics, computer exposure etc. has been analyzed. This survey was tested using 340 responses received from the survey. Several interesting findings emerged. First, the study reveals that 87.50% male students are involved in software piracy of either type where as 75% female students are involved in piracy in one or other way. Secondly, the percentage of students involved in piracy falling under the age group 17-21 is 78.26% where as students above of 22 years involved in piracy are 90.91%. Thirdly, the percentage of students at Post-Graduate level involved in piracy is 96.25% whereas the under graduate level student's involved in piracy are 79%. Fourthly, the most familiar method of piracy is the Hard-disk loading.

Keywords

Software piracy, Ethical, Unethical, Types of Software Piracy, Test of Proportions.

1. INTRODUCTION

Piracy of computer software is defined as the illegal copying of software for distribution within the organization, or to friends, clubs and other groups, or for duplication for the purpose of resale. Software piracy is widespread in many parts of the world. The software industry loses billions of dollars each year to piracy, and although it may seem innocent enough to install an application on a couple of additional machines (called "softloading" and "softlifting"), it may ultimately shatter the profitability of a small software company. Because software piracy is all but impossible to halt entirely, software companies attempted to prevent software piracy by different measures. However, such measures have generally met with little success, as determined users soon discover ways to avoid or defeat them. Moreover, some of them have actually alienated users by making software more difficult to install or use, notably the tedious task of typing in long registration codes and the annoyance of having to call the vendor after installation or reinstallation to obtain an authorization code. According to Business Software Alliance (BSA), more than seven in 10 computer users globally (71%) profess support for intellectual property rights and protections, to yet nearly half (47 percent) acquire

their software by illegal means most or all of the time [1]. The issue software piracy is immensely important to both the software industry and the research community. It is an ethical issue, especially in academic settings. Many students consider software piracy and other unethical use of information technologies as an acceptable behavior [2]. This objective of the paper is to explore the mind set of computer science students towards piracy. It aims at identifying and understanding the software piracy determinants among the students. The current research used a survey technique at Jammu University and different colleges affiliated to University of Jammu to examine perceptions of software piracy and the paper is an attempt to discover its underlying factors among the students. About 350 responses were gathered from students in the discipline of Computer Science. By means of different questions we were able to identify the attitudes of students towards software usage, general acceptance, convenience, ethics and technical aspects related to piracy. It showed that computer experience or computer usage demonstrated a direct and positive relationship to software piracy. The results also showed the degree of piracy used by the students at different levels.

2. PREVIOUS RESEARCH

There has been an increasing amount of literature about software piracy among students in the educational institutions. A considerable amount of these studies have investigated the relationship between software piracy and students. The results from previous study suggest that the students who are well versed with the computers are involved more in piracy as compared to others [3,4,5]. More research findings suggested the research on the usage of pirated software and its determinants [6,7,8]. The educational sector is well influenced by the software piracy as observed by M. Siponen [9]. Previous studies were also conducted on quantitative study of students to demonstrate the scope of software piracy in a University setting [10,11].

3. METHODOLOGY

In this study, survey of undergraduate and postgraduate students in J&K was done. This questionnaire was distributed among students either in the form of hard copy or soft copy through e-mail ID. The sampling frame consisted of random selection of the students belonging to computer science discipline. Three hundred and sixty five questionnaires were collected and twenty-five questionnaires were incomplete or unusable. The remaining three hundred and forty (94%) of the questionnaires formed the sample. Demographic variables included in the study were gender, age, duration of computer and the Internet usage in a month, frequency of downloading software, information about

types of piracy, medians used for pirating software, reliability of pirated software, morality, ethics were questioned. The piracy analysis of the current study consist of fourteen questions on the basis of using different methods of piracy like counterfeiting, hard-disk loading, softlifting, and corporate software piracy.

4. OBSERVATIONS AND ANALYSIS

Students were asked their experience with downloading of software, types of piracy and their usage. This data obtained is tabulated in Table 1 and figure 1 reflects the pictorial representation of Table 1. It shows clearly that most of the students were fairly familiar with methods of software piracy and that even those with limited exposure used it well.

Out of the 340 respondents, 58.82% were males and 41.18% were females. The overall percentage of male students involved in piracy is 87.50% and percentage of female students involved in one or other way in piracy is 75%. The students surveyed up to graduation level are 29.41% whereas students of post-graduation level involved in piracy are 70.59%. More than half of the respondents 67.65% were below 21 years old, 32.35% were between 22 years and older. Out of the 230 respondents whose age is below 21, 78.26% participate in software piracy in one or other way. Out of the total data 110 respondents are above is 22 years and 90.91% of them are involved in software piracy activities.

The data obtained indicates that piracy method of hard-disk loading is highly prevailing and 93.23% of students are involved in it. Whereas students involved in sharing of the licensed software among friends are 5.58%. In other two methods i.e counterfeiting and hard-disk loading the percentage of students involved in piracy are 20.58% and 51.47% respectively. Hard-disk loading seemed to be the most prominent method of software piracy among computer science students.

Level of Significance

We have further analyzed the data by using test of proportions for finding the level of significance (z). It is tabulated in the table 2 and the pictorial representation is depicted in figure 2. The rejection region is determined by applying two tailed test at 5%. It is observed that the value of z is 6.63 which is in the rejection region and as such we reject Null hypothesis and conclude that there is significant difference between male and female in the "Software developers are badly affected by software piracy" factor of criteria.

It is further observed that the value of z is in the rejection region and as such we reject Null hypothesis and conclude that there is significant difference between UG and PG students "I am familiar with types of software piracy", "I have used different medians to pirate software", "How frequently I have been involved in software piracy in last month", "What type of piracy I am most familiar with?", "Software piracy is not reliable", "Morally it will be wrong to pirate software" and "Software developers are badly affected by software piracy" factors of criteria.

5. CONCLUSIONS/FUTURE DIRECTIONS

Usage of pirated software is a serious problem among students of computer science and they don't consider piracy as unethical. It has become more difficult to deal with software piracy due to the easiness of access to internet. The population belonging to computer science and information technology disciplines have more access and are more reliant on computers and internet whether in academics or in profession. It is concluded through this study that computer science students have a higher percentage of using software piracy at Post Graduation level and hard-disk loading is the most popular method of piracy which is

highly prevailing. Current study on piracy is carried on computer science students only. This can be further extended for future research from academics to other fields too. As the present study was based only on the state University of Jammu region, future studies may utilize a more diverse sample including students from different universities and colleges.

A large number of methods to control software piracy at the technical level have also been researched and implemented at different levels. Hardware and software control measures are continuously developed and modified to control the piracy and an extended research is needed in future. Number of techniques like Software Watermarking, Splitting on the Clients, Code Key, and developing different algorithms for identification of genuine copy of the software are current and extended areas of research.

6. REFERENCES

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Demographic Statistics	Sample Percentage	Piracy Measures (Mean)													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Gender															
Male	58.82	95.00	87.5	96.00	40.00	67.50	36.50	24.50	5.50	57.50	96.00	80.00	74.00	82.00	57.50
Female	41.18	85.71	75.0	71.43	35.71	53.57	33.57	15.00	5.71	42.86	89.29	75.00	94.29	64.29	53.57
Age															
17-21	67.65	91.30	78.2	84.78	34.78	67.39	69.57	15.22	4.35	47.83	93.04	73.91	78.26	76.09	52.17
22-older	32.35	90.91	90.9	88.18	45.45	68.18	83.33	31.82	8.18	59.09	93.64	86.36	90.91	71.82	63.64
Education Level															
UG	29.41	79.00	60.0	67.00	20.00	25.00	20.00	15.00	5.00	60.00	88.00	45.00	60.00	45.00	40.00
PG	70.59	96.25	91.6	97.92	45.83	77.08	71.43	22.92	5.83	47.92	95.42	87.50	91.67	87.08	62.50

1. I have downloaded/uploaded the software from/internet at least once.
2. I am familiar with types of software piracy.
3. I have used different medians to pirate software.
4. How frequently I have been involved in software piracy in last month?
5. What type of piracy I am most familiar with?
6. What type of piracy I am least familiar with?
7. I have used counterfeiting as a medium for copying the software.
8. I have shared my licensed software with my friends.
9. I have installed a OEM software on other computers.
10. Hard-disk loading is a common practice now a days and I have no problem of software loading on my computer.
11. Software piracy is not reliable.
12. Morally it will be wrong to pirate software.
13. Software developers are badly affected by software piracy.
14. Copying software for educational purpose is not piracy.

Table 1

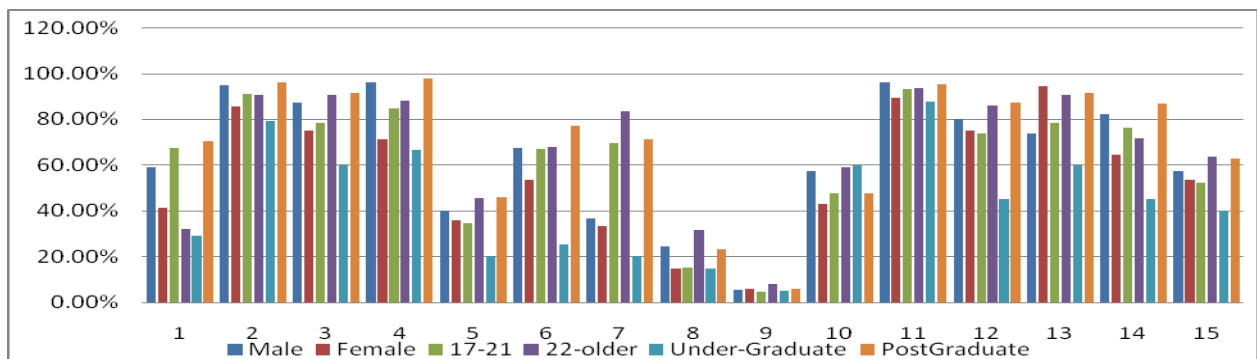


Figure 2

Table 2: Level of Significance

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Gender	2.9635	2.8782	6.0496	0.8042	2.5984	0.5583	2.2174	0.084	2.6864	2.2694	1.081	5.528	6.6326	0.7174
Age	0.1194	3.276	0.875	1.875	0.146	4.2793	3.298	1.305	1.966	0.207	2.85	3.276	0.8322	2.03
Education Level	4.055	6.074	6.452	5.033	10.19	4.239	1.765	0.314	2.0602	2.108	7.851	6.074	7.756	3.872

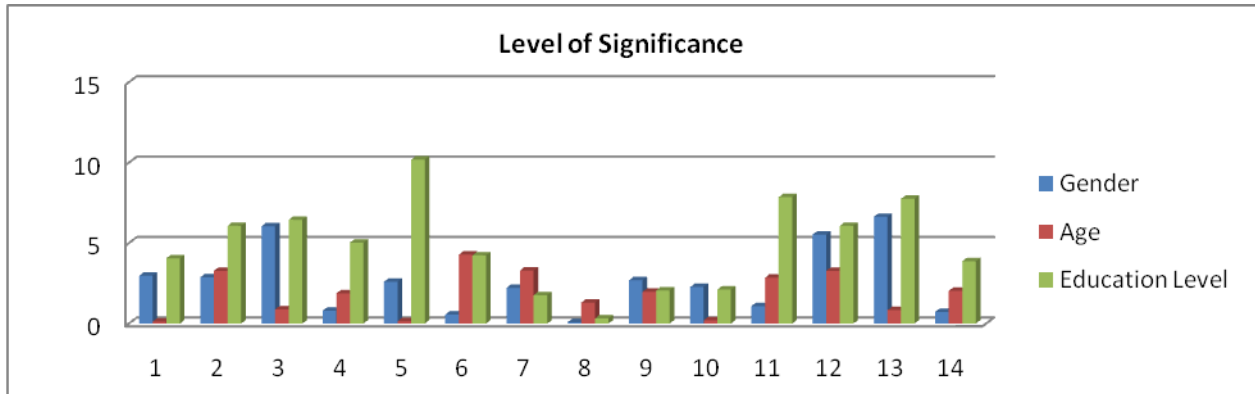


Figure 2