

OPEN SOURCE SOFTWARE AWARENESS**Bhupender Sharma**

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Abstract

The present study is about the awareness of Open Source Software (OSS) among the students, researchers and faculty members of Punjab. Study shows that the researchers are well aware with OSS whereas faculty members & students lack awareness substantially. Researchers, students and faculty members were quite familiar with names of various software which are actually open source. Since the OSS can be extremely useful in accelerating knowledge and information free of cost besides saving a lot of precious time, therefore, adequate steps are required to be taken to highlight awareness about OSS through organizing conferences / seminars, guiding, preaching and imparting hand to hand practical training to enable users gain maximum benefits through this splendid gift of OSS.

Keywords: *Open Source; Open Source Software; Free Software; Free Open Source Software; free code; source code; Awareness of open source software;*

Introduction

In earlier days, the use of computer/internet was in infant stage, but after launch of various software, the computer market progressed upward tremendously. Software market got infested with so many commercial equipment to enable users work efficiently apart from other hundreds of easy functionalities. The cost to purchase such software was initially on higher side but now it has resorted to accessible limit. During those days there were problems too, such as lack of access to the program code, vendor Lock-in, unbearable cost of upgrades, and certain unknown security weaknesses. Consequently, a new matching software market emerged which has facility like free or say Open Source. It can be termed as FOSS (Free open source software). FOSS has added a new dimension to the way software is understood, developed and deployed in various areas (VIXIE 1999)¹. FOSS brought a major change in IT industry which is invariably due to

expansion of internet as well as Web technology, but still the importance of FOSS cannot be under-estimated. Contribution of FOSS is really praise worthy.

“Open Source Software is a computer software whose source code is available under a license (or arrangement such as the public domain) that permits users to study, change and improve the software and to redistribute it in modified or unmodified form” (Wikipedia).²

The Free Software Foundation (FSF) was founded in 1983 along with its demonstration GNU project. Richard Stallman, an MIT professor, had worked as a student on project where software was freely exchanged without copying or modifying stipulations. Why, he asked himself and others, should software users be prohibited from copying it for friends, looking at the source code and copying it and redistributing the result? Talking this idea to the group level, Stallman and others created the FSF and set out to demonstrate that an entire operating system could be developed and shared freely. The result was the Unix-like GNU, which, in August 1996, became complete by adding a kernel.

Open source software is an emerging concept towards free of cost software. In 1985, Free software foundation's Richards Stallman stressed the need to support the free software movement, which promotes the universal freedom to study, distribute, create and modify computer software through its own General public licence.

Stallman defines free software as possessing four essential freedoms:

1. You have the freedom to run the program, for any purpose.
2. You have the freedom to modify the program to suit your needs. (To make this freedom effective in practice, you must have access to the source code, since making changes in a program without having the source code is exceedingly difficult.)
3. You have the freedom to redistribute copies, either gratis or for a fee.
4. You have the freedom to distribute modified versions of the program, so that the community can benefit from your improvements³.

“Open-source software (OSS) is computer software with its source code made available with license in which the copyright holder offers the right to study change and distribute the software to anyone and for any purpose. Open-source software may be developed in a collaborative public manner⁴.”

Source is defined by Vengie Beal⁵ “A place from which data is taken. Many computer commands involve moving data. The place which the data is moved is called the source, whereas the place it is moved to is called the destination or target.”

“Program instructions in their original form. The word source differentiates code from various others that it can have (for example, object code and executable code). Initially, a programmer writes a program in a particular programming language. This form of the program is called the source program or more generically, source code.⁶”

In case a programmer intends to modify certain program, he must coin the source code in a preferred form that can be easily comprehended and should not obfuscate it. It should not be just a translation of the original. Such programmer must ensure source code, its distribution and compiled form. Anyhow, if a programme cannot be supplied with source code due to some technical reasons, the easiest way is to convey link, may be with nominal or very meager cost, but without charging for downloading it through internet.

Widespread adoption of OSS has been observed in domains like E-governance, SMEs, Education and Research, etc. A survey of public administrations of thirteen European countries done even five years ago reported that 78% of them were using FOSS (Ghosh and Glot, 2005)⁷. Another survey in the US conducted around the same time estimated that 87% of organizations surveyed were using FOSS (Walli et al., 2005)⁸. One of the surveys of Indian IT Companies (NRCFOSS/AU, 2010)⁹ showed that all of them (100%) were using FOSS in one form or other and about half of them considered FOSS as an option while procuring new software.

Related Studies

Most participants were familiar with the term FOSS, with only 9% indicating that they

had never heard of the term. Most of them correctly described the key tenets of OSS, with only 16% incorrectly indicating that users could not distribute modified code (Woodall and Maruis, 2013)¹⁰. A dire need to promote awareness of open sources software among library professionals is felt along with due provision of adequate training to enable them maintain and work on it efficiently. Anjaneyulu and others (2017)¹¹. LIS professionals need to develop a positive attitude towards use of OSS to tailor various library services in their own ways (Satpathy and Maharana, 2012)¹². Lack of knowledge (Blessing, 2012)¹³. Respondents are more aware of the five library software namely

Dspace, Koha, Libsys, Greenstone and SOUL (Leeladharan and Ilammaran, 2015)¹⁴. Respondents were not aware of at least one of the basic principles (free distribution, access to source code, modifiability of source code, redistribution of modifications, no unreasonable restrictions). They lacked licensing knowledge whereas it was available “free”. Unawareness of OSS and its benefits clearly obstruct the users from maximizing the benefits (Marko and Natasha, 2005)¹⁵.

Objective of the Study

1. Find out the awareness about Open Source Software (OSS) among PG Students, Researchers and Faculty members.
2. Find out the majority of awareness about a particular OSS among users.

Methodology

Data collection methodology and multiple data collection techniques were employed to triangulate the data. Data collection techniques used included internet search, document review, surveys, site visits and interviews. Only percentage method was used. However, multiple answers were permitted as and when required.

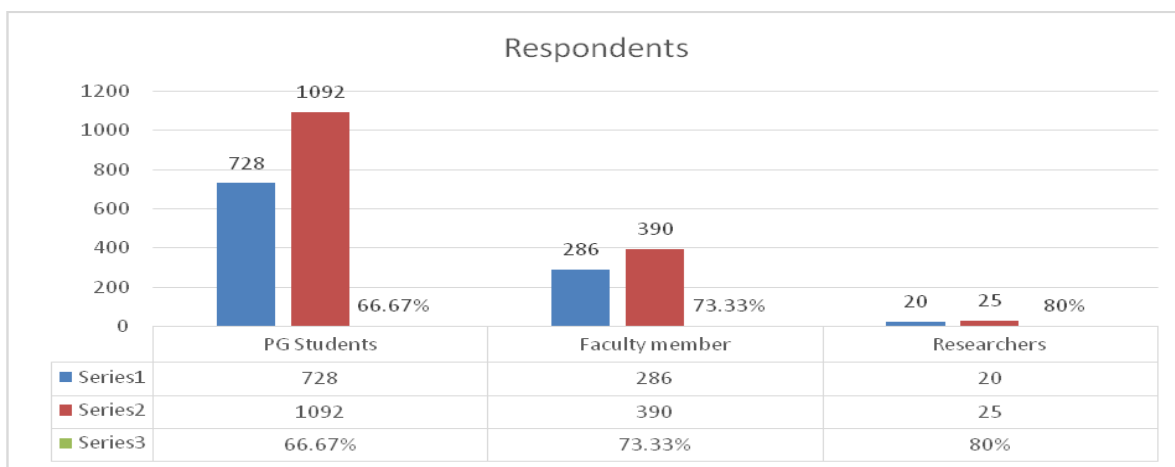
Scope and limitations of the study

The scope of the study encompasses the awareness of open source software (OSS) among the PG Students, Researchers and Faculty members in colleges of Punjab. However, the study has following limitations:

1. The study is limited to Punjab only.
2. The study covers the faculty members, researchers and PG Students category of academic colleges. The study is limited to awareness of OSS only.
3. The study includes only the academic PG Colleges affiliated to Punjab University, Chandigarh.

Data Analysis

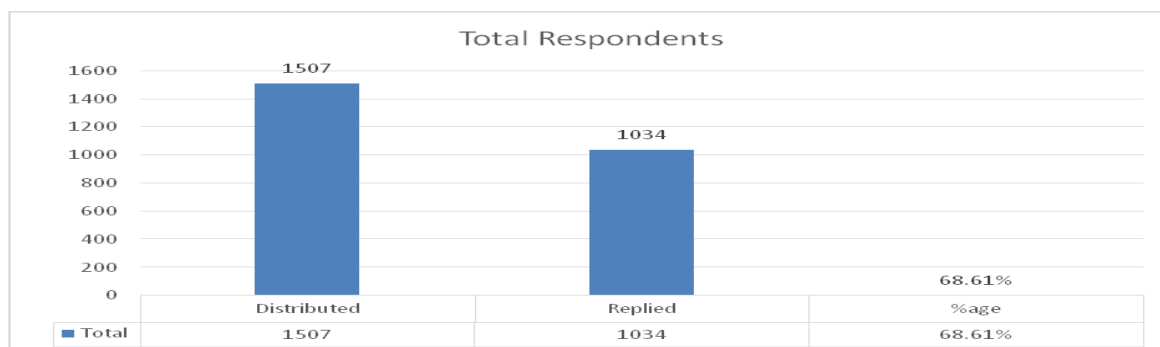
Figure No. 1



The researcher contacted 1092 PG Students, 390 Faculty members and 25 researchers out of which 728 students, 286 Faculty members and 20 researchers respectively responded to the questionnaire supplied to them which means 66.67% students, 73.33% Faculty members and 80% researchers response was received. In total, such a good response to the query is deemed adequate to make assessment about any topic.

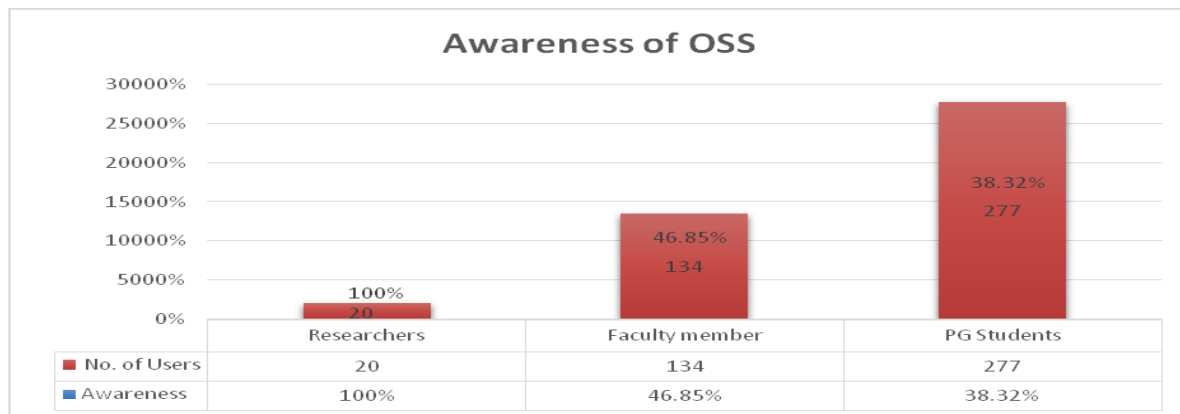
Researchers had replied in majority, followed by faculty members and students respectively

Figure No. 2



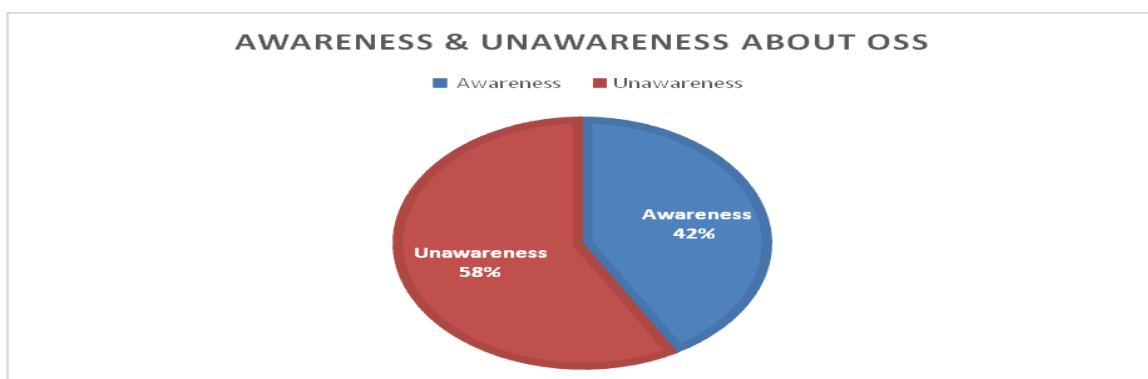
The above table displays that total 1507 questionnaires were distributed among respondents, out of which 1034 expressed their views on Open Source Software which means 68.61% response to the survey, is sufficient to pass judgment about any matter.

Figure No. 3



Henceforth, the study confines to the numbers of respondents who replied to our query. In other words, now the onward study shall quote the views of only 20 Researchers or say cent percent, 134 Faculty members and 277 PG Students to arrive at a conclusion. As regards awareness, they participants were enquired whether they have listened about the Open Source Software, the response was enthusiastic from Researchers, as it was cent percent, but it was a distress to hear from Faculty Members that only 134 or say 46.85% had just listened the name. In case of PG students the situation was further displeasing, as only 277 or say 38.32% had heard the name of Open Source Software. Such a condition is alarming in modern country like ours. Even the awareness about Open Source Software is **lacking** what to say of its utilization.

Figure No. 4

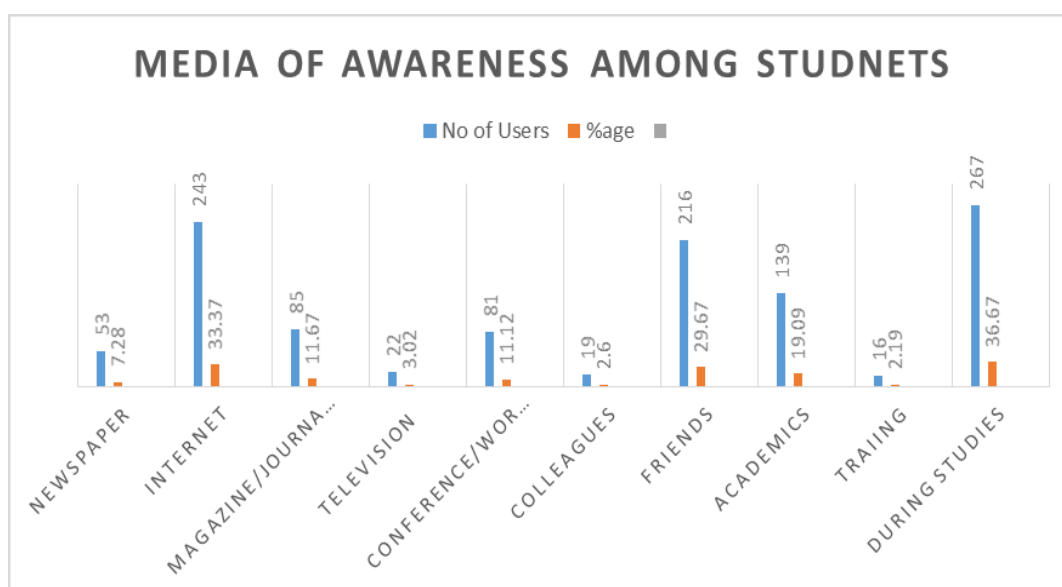


From the figure above, explicitly vivid that Lack of Awareness about Open Source Software among total population is high at 58% whereas only 42% were aware about it.

Media of Awareness

Further, when the question about Media through which they came to hear or know about Open Source Software was put to respondents, their reply was amazing. They learnt it through various means of media. Media of awareness consists of Newspaper, Internet, Magazines, Journals, Television, Conferences, Seminars, Colleagues, Friends, academics, Training and during Study.

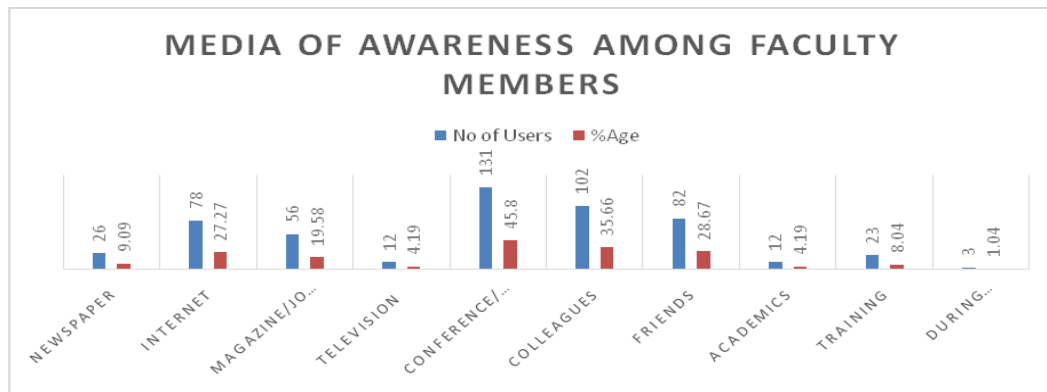
Figure No. 5



Multiple answers accepted

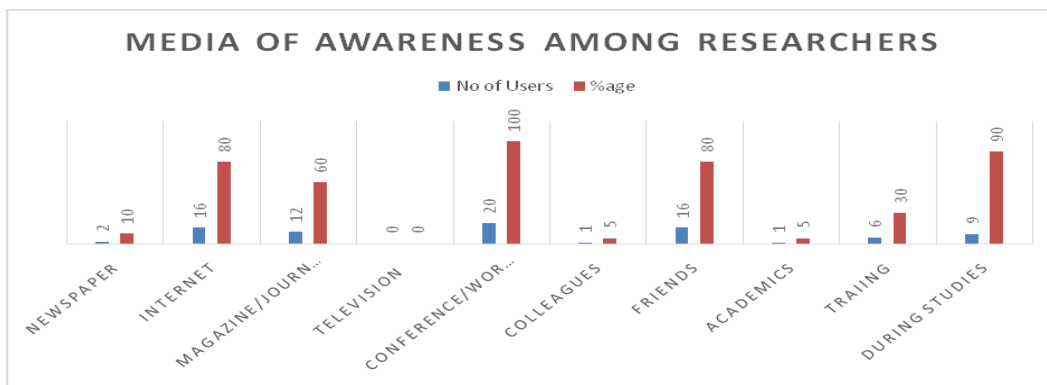
The response received from Post Graduate Students about source of OSS were in multiple answers. It was noted that most of the students had come across OSS during studies whereas interaction among colleagues could apprise them least of OSS. Contribution of colleagues was just 19 (2.6%), through television 22 (3.02%) through newspaper was 53 (7.28%). During training they learnt about OSS 16 (2.19%), through conferences/seminars it was 81 (11.11%) magazines/journals 85 (11.67%) Academics 139 (19.09%) through friends 216 (29.67%) from Internet 243 (33.37%) and during study they came across 267 (36.67%)

Figure No. 6



The highest choice was for conferences and seminars 131(45.8%), and the least choice was noticed for during study period at 3 (1.04%), Newspaper accounted for 26 (9.09%), Internet 78 (27.27%), magazines and journals 56 (19.28%), television 12 (4.19%), Conferences and seminars 131 (45.8%), Colleagues 102 (35.66%) and friends 82 (28.67%), Academics 12 (4.19%) respectively.

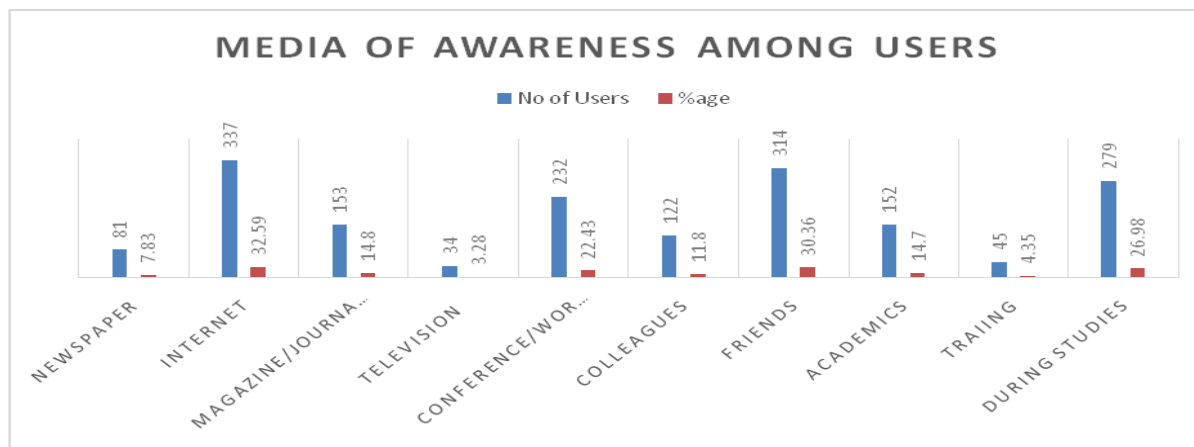
Figure No. 7



The researchers are very well acquainted with OSS as they need to access various sources and places to endorse their views and has to explore deeply to reach out to a conclusion, as such this is but natural that this category is well aware about OSS. However, maximum awareness among them was due to attending seminars and conference, or say cent percent. As expected, they abstain from television, may be due to shortage of time or their inclination towards research, it ranks to nil. Colleagues and Academics hardly intimate them about OSS as it is just 5% each. They learnt 10% through newspapers, 30% during training, 90% during studies, 80% each through

internet and friends when they deliberate over their thesis and 60% through magazines.

Figure No. 8

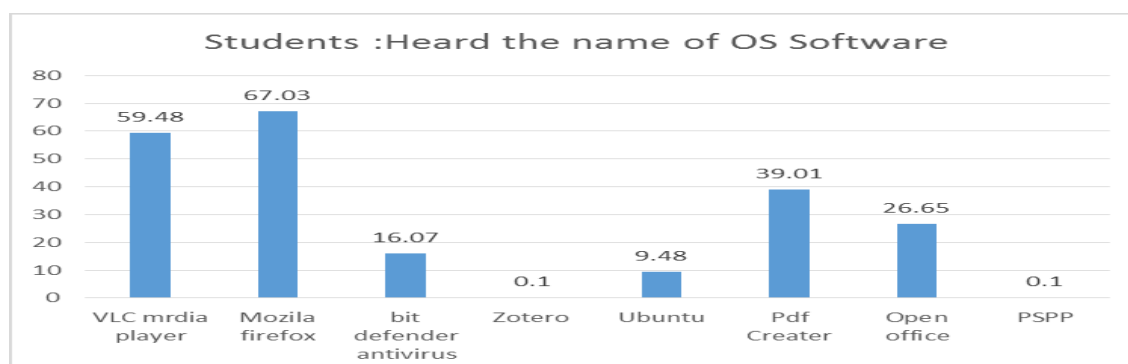


During survey of total respondents including Researchers, Faculty members and students, the overall data depicted differently.

However, maximum awareness among them was due to internet at 337 (32.59%) and the least can be attributed to television at 34 (3.28%) as expected, they abstain from television, may be due to shortage of time or their other preferences. Colleagues 122 (11.8%) and Academics 152 (14.7%) intimate them about OSS. They learn 7.81% (81) through newspapers, 4.35% (45) during training. It was 30.36% (314) through friends when they deliberate among themselves and 14.8% (153) through magazines.

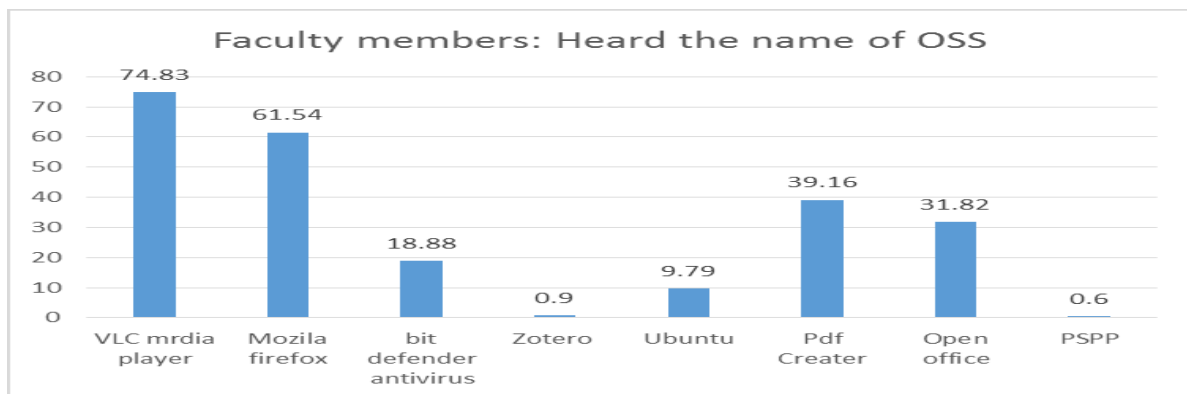
Further, when the question about whether they had ever heard the name of Software was put to respondents, the reply was amazing. Even those participant who had confessed that they were unaware about Open Source Software, informed that they were using such and such Software, but were unaware that this is covered under Open Source Software.

Figure No. 9



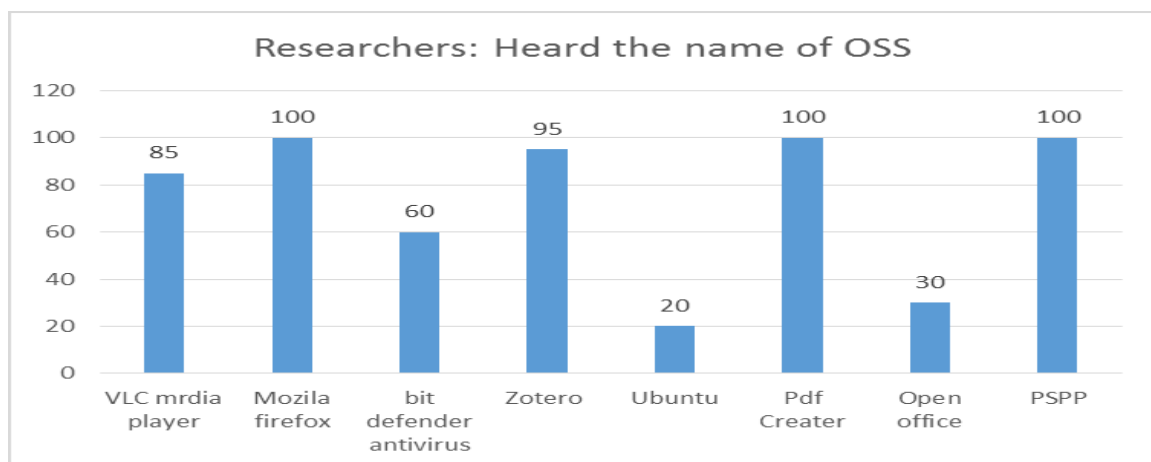
The study conducted among post graduate students as to which particular OSS they prefer. They intimated that Mozila Firefox was their first choice at 67.03% and the least option was Zotero and PSPP at 0.1% each. VLC media player stood second choice 59.48%, Bit defender antivirus was 16.07%, and Ubuntu was the choice among 9.48%. But pdf creator OSS was found generally used at 39.01% whereas Open office at 26.65%.

Figure No. 10



Survey conducted among Faculty members as to which particular OSS they prefer indicated that VLC media player was their first choice at 74.83% and the least option was Zotero at 0.9% and PSPP at 0.6% respectively. Mozilla Firefox stood second choice 61.54%. Bit defender antivirus was 18.88%, Ubuntu was the choice among 9.79%. But pdf creator OSS was found generally used at 39.16% whereas Open office at 31.82%.

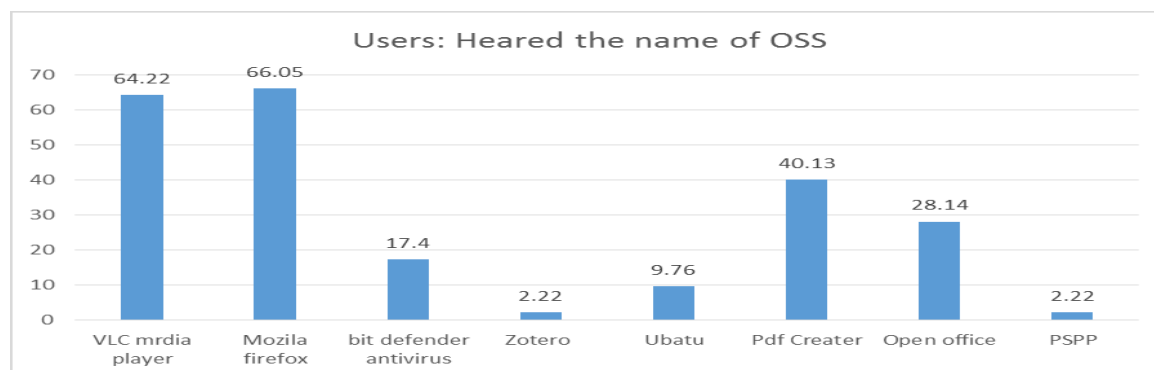
Figure No. 11



During the conduct of Survey among Researchers as to which particular OSS they

prefer, it was observed that Mozilla Firefox, PSPP and pdf Creator were their equally first choice at cent percent and the least option was Ubuntu at 20%. Zotero was the second choice at 95% whereas VLC media player at 85%. Bit defender antivirus was the choice of 60% whereas Open office was at 30%.

Figure No. 12



In order to ascertain majority of a particular Open Source Software usage among users was analysed on the basis of collected data, wherein it was noticed that Mozilafirefox was the First Choice (64.22%) among all the users and VLC media player stood at the second place (64.22%) whereas the third place is awarded to pdf creator (40.13%). The least preferred OSS were equally Zotero and PSPP (2.22%).

Bit defender antivirus (17.4%) and Open office at 28.14% respectively.

Findings

1. **Researchers' majority** in replying the questionnaires.
2. Researcher has **cent percent awareness** about the OSS and there is no lack of awareness among the researchers about OSS.
3. Faculty members and students **lack awareness** about the OSS.
4. The collective (Researchers, faculty and students) awareness is 42% about the OSS that is not up-to the mark (50%). It shows that there is **lack of awareness**.
5. During studies, friends & internet are the **major source of awareness** of OSS among the **students**
6. Conference / seminars, colleagues and friends are the **best source among the faculty** members about OSS

7. Researchers heavily rely on Conference / Seminar, during studies, internet and friends about OSS awareness.
8. Students had listened/used the name of Mozilla firefox, VLC media player and pdf creator which is more popular than the name of Open Source Software.
9. Faculty members had listened/used the name of VLC media player, Mozilla Firefox, pdf creator and Open Office but they did not know it by the name of Open Source Software.
10. Researchers had not only listened the name of Mozilla firefox, pdf creator, PSPP, Zotero and VLC media player but were also equally aware of it being termed as Open Source Software.
11. Amazingly, the users are aware about the software but did not know that this is the Open Source Software.

Conclusion

Awareness of Open Source Software is not so good because the present study shows that there is lack of awareness. Although the users are well aware with various names of open source software such as VLC media player, pdf creator etc., yet we can't conclude that they are aware of OSS, so it is lack of awareness. But it is also true that they don't know Open Source Software that are freely available on website for use or reuse and they can develop it as per their needs because OSS is provided with source code. However, very few users use the software freely although they didn't know that they can develop it with source code.

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