

ICT INFRASTRUCTURE FACILITY IN AGRICULTURAL COLLEGE LIBRARIES IN MAHARASHTRA: A STUDY

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Abstract

This study attempt to examine the ICT infrastructure facilities available in Agricultural college libraries affiliated to Mahatma Phule Krishi Vidyapeeth, Rahuri. For the present study there were 40 colleges selected. From this study it was found that majority of the libraries don't have necessary infrastructure facilities to access the e-resources for their users.

Keywords:- *ICT, Hardware, Software, ICT Infrastructure, Library Services*

INTRODUCTION:-

Information Communication Technology (ICT) is being increasingly used in library and information services for the acquisition, processing dissemination of information. Libraries and Information centers have been using ICT infrastructures and services to satisfy the diverse information need of their users. However, these infrastructures and services are not used fully. Under usage of these infrastructures and services has been a cause of concern to librarian worldwide. The use of Information Communication Technology infrastructures has become increasingly important in self-financing engineering college libraries. Self-financing engineering college libraries are switching over to ICT infrastructures at an accelerated pace. E-Journals, CD-ROM databases, online data bases, e-books, web based infrastructures and a variety of other electronic resources are fast replacing the traditional resources of self-financing engineering college libraries.

OBJECTIVES:-

1. To assess the nature and quantum of Resources available in the Agriculture College Libraries.
2. To identify the ICT infrastructure in Agriculture College Libraries.

HYPOTHESIS: _

1. There is Significant Difference in ICT Infrastructure Facility in Self-Financed and Constituents Agricultural College

REVIEW OF LITERATURE:--

The lot of researchers are conducted a study on ICT facilities/Infrastructure available in libraries.

Real & et...al (2014) have studied the status of the ICT Facilities available in Rural public libraries & its challenges. The researchers found that lot of the public rural libraries are adopted ICT infrastructure like they have access internet facility with bandwidth, lot of the libraries have computer terminals etc.

However, **Prakash, Ramanna& Rajkumar (2014)** in their study entitled “Library Collection, Facilities and Services of the Central University of Karnataka: A Survey” demonstrate the varies aspects of use of collection & services, availability of the ICT infrastructure, print & electronic resources, databases.

While, **Okeke, Oghenetega & Umeji (2014)** in their paper they discovered that the most of the students in the faculty of social sciences are aware of the ITC tools like computer & etc also they explored students used GSM & social media commonly in Madonna University Okija Campus.

Nazi & et..al (2014). Surveyed that the mobile facility implementation in national library at Iran & they stated that the 68% respondents supported to the adopt this facility for the all events, overdue date intimation, OPAC facility etc. in short the users recommended to increase the ICT infrastructure for the library services through cell phone.

Mondal & Bandyopadhyay (2014) have studied the status of ICT infrastructure in the university libraries of west Bengal, India. It is concluded that the most of the libraries are in different stages of the development also they have faced lot of problems for the development of the ICT infrastructure in the libraries.

While, **Kruse (2014)** conduct a survey on Research libraries’ new role in research data management, current trends and visions in Denmark. They it is found that no any library used common ICT Infrastructure to manage the all resources it may be e-resources as well print resources.

Tiwari & Sahoo (2013) investigated the Infrastructure & Use of ICT in University Libraries in Rajasthan state. It was found that all the university libraries are in developing stage. Also ICT infrastructure was the need of the present era for the change the status & to give the quick services to the users. The researchers stated that the library staffs have needed to get the ICT training as well as practices.

Siddiqui & Walia (2013) in their study highlighted Comparatively in India & UK regarding the ICT Papers in LIS Syllabus & they it is found that in UK LIS curriculum

more weight age is given to ICT papers while in Indian LIS curriculum more traditional type papers are still part of the curriculum.

Mohd, Esmail & Nagrajan (2013) have studied the attitude of the users regarding e-resources & services in engineering colleges affiliated to north Maharashtra University & then it is stated that the lack of ICT infrastructure in engineering college libraries for the access of e-resources. The library users suggested that to develop the current & adequate ICT facilities in the knowledge resource centers/ Libraries.

DATA ANALYSIS

ICT INFRASTRUCTURE

Table No. 1, Hardware Available in Libraries

| Library Code | Computers | Laptop | Tablets | Server | Printer | Scanner | Barcode Reader | E-Book Reader | L.C.D. Projector | Television with VCR | Photo Copy Machine | Audio Visual Equipment's | CCTV | Telephone | Fax | Total |
|--------------|-----------|--------|---------|--------|---------|---------|----------------|---------------|------------------|---------------------|--------------------|--------------------------|------|-----------|-----|---------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 1 to 15 |
| A | 43 | 1 | 1 | 2 | 4 | 2 | 2 | 2 | 1 | 0 | 1 | 1 | 12 | 1 | 1 | 74 |
| B | 40 | 1 | 0 | 1 | 2 | 2 | 1 | 1 | 0 | 1 | 2 | 1 | 19 | 1 | 0 | 72 |
| C | 80 | 1 | 0 | 4 | 4 | 2 | 1 | 4 | 2 | 1 | 2 | 1 | 20 | 10 | 1 | 133 |
| D | 47 | 1 | 0 | 3 | 5 | 3 | 2 | 2 | 1 | 1 | 1 | 4 | 15 | 1 | 1 | 87 |
| E | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 10 |
| F | 3 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 10 |
| G | 2 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| H | 5 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| I | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| J | 40 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 5 | 1 | 1 | 52 |
| K | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 1 | 1 | 8 |
| L | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 7 |
| M | 5 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 6 | 1 | 1 | 2 | 0 | 1 | 1 | 21 |

Cont.....

| Library Code | Computers | Laptop | Tablets | Server | Printer | Scanner | Barcode Reader | E-Book Reader | L.C.D. Projector | Television with VCR | Photo Copy Machine | Audio Visual Equipment's | CCTV | Telephone | Fax | Total |
|--------------|-----------|--------|---------|--------|---------|---------|----------------|---------------|------------------|---------------------|--------------------|--------------------------|------|-----------|-----|---------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 1 to 15 |
| N | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| O | 2 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 9 |
| P | 2 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 9 |
| Q | 53 | 25 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 10 | 0 | 0 | 92 |
| R | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| S | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 5 |
| T | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| U | 6 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 13 |
| V | 13 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 16 |
| W | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| X | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 3 |
| Y | 5 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Z | 5 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 12 |
| AA | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 5 | 1 | 1 | 14 |
| AB | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 5 | 1 | 1 | 14 |
| Library Code | Computers | Laptop | Tablets | Server | Printer | Scanner | Barcode Reader | E-Book Reader | L.C.D. Projector | Television with VCR | Photo CopyMachine | Audio Visual Equipment's | CCTV | Telephone | Fax | Total |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 1 to 15 |
| AC | 10 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 21 |
| AD | 5 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 6 | 1 | 1 | 1 | 0 | 1 | 1 | 21 |
| AE | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 6 |

| | | | | | | | | | | | | | | | | |
|----|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| AF | 5 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 12 |
| AG | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| AH | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 4 |
| AI | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 5 |
| AJ | 20 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 1 | 29 |
| AK | 4 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 |
| AL | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 |
| AM | 20 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 28 |
| AN | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |

The table no. 1 reveals that total no of Hardware's available in the Agricultural College Libraries. The Code no A to F indicated Constituents Colleges and Code G to AN Indicated all the Self Financed College. In the out of 6 Constituents Colleges Mahatma PhuleKrishiVidyapeeth Library on rank first with 133 hardware's including 80 Computers, and 4 Servers, and 20 CCTV Cameras for the Security Purpose, Followed by Agriculture College Library of Dhule with 87 Hardware's including 47 computers and 3 servers. On a rank three have Agriculture College Library Pune with 74 hardware's including 43 Computers, 1 Laptop, 2 Separate Library servers and etc.

It is also shows that the Self Financed College Libraries situation regarding the hardware's, that is only one library have 92 hardware's that is Agricultural College Library Baramati followed by Pad. Dr. D. Y.Patil College of Agricultural Business management College Library with 52 hardware's including 40 Computers.

Out of 6 Constituents College Libraries all have good ICT Infrastructure but out of 34 Self Financed College Libraries 18 libraries have only 1 to 2 Computers and One library don't have till any desktop in the library, Most of the Self Financed College Libraries don't have separate Library servers, and CCTV cameras for the Security Purpose.

Hence the **Hypothesis No.1 There is Significant Difference in ICT Infrastructure Facility in Self Financed and Constituents Agricultural College Libraries is Valid.**

Table No. 1.1 Total Hardware VS Category of the Colleges

| Sr. No | Hardware | Constituents College (N=6) | Percentage | Self-Finance College (N=34) | Percentage |
|--------|----------------|----------------------------|------------|-----------------------------|------------|
| 1 | Computers | 217 | 56.22 | 222 | 49.22 |
| 2 | Laptop | 4 | 1.04 | 30 | 6.65 |
| 3 | Tablets | 1 | 0.26 | 1 | 0.22 |
| 4 | Server | 11 | 2.85 | 10 | 2.22 |
| 5 | Printer | 17 | 4.40 | 24 | 5.32 |
| 6 | Scanner | 11 | 2.85 | 21 | 4.66 |
| 7 | Barcode Reader | 6 | 1.55 | 9 | 2.00 |

| | | | | | |
|----|--------------------------|------------|---------------|------------|---------------|
| 8 | E-Book Reader | 9 | 2.33 | 0 | 0.00 |
| 9 | L.C.D. Projector | 6 | 1.55 | 26 | 5.76 |
| 10 | Television with VCR | 3 | 0.78 | 13 | 2.88 |
| 11 | Photo Copy Machine | 8 | 2.07 | 19 | 4.21 |
| 12 | Audio Visual Equipment's | 7 | 1.81 | 10 | 2.22 |
| 13 | CCTV | 66 | 17.10 | 31 | 6.87 |
| 14 | Telephone | 16 | 4.15 | 20 | 4.43 |
| 15 | Fax | 4 | 1.04 | 14 | 3.10 |
| 16 | Other | 0 | 0.00 | 1 | 0.22 |
| | Total | 386 | 100.00 | 451 | 100.00 |

The table 1.1 shows the Total Hardware VS Category of the Colleges. It reveals that in the 6 Constituents colleges having 386 total hardware's out of this 217 (56.22%) having Computers; however 66 (17.10%)having CCTV. 4 (1.04%) colleges having Fax. And in the 34 Self Financed Colleges having total 451 hardware's out of this 222 (49.22%) have Computers, 10 (2.22%) servers and etc. Hence the **Hypothesis No.1 "There is Significant Difference in ICT Infrastructure Facility in Self Financed and Constituents Agricultural College Libraries"** is Valid.

Table No. 2 Library Automation Software

| Sr. No | Type of Library Software | Automation Software | Percentage |
|--------|-------------------------------|---------------------|------------|
| 1 | In House | 3 | 7.5 |
| 2 | Only Commercial | 19 | 47.5 |
| 3 | Only Open Source Software | 3 | 7.5 |
| 4 | Commercial & Open Source Both | 1 | 2.5 |
| 5 | Not Available | 14 | 35 |
| | Total | 40 | 100 |

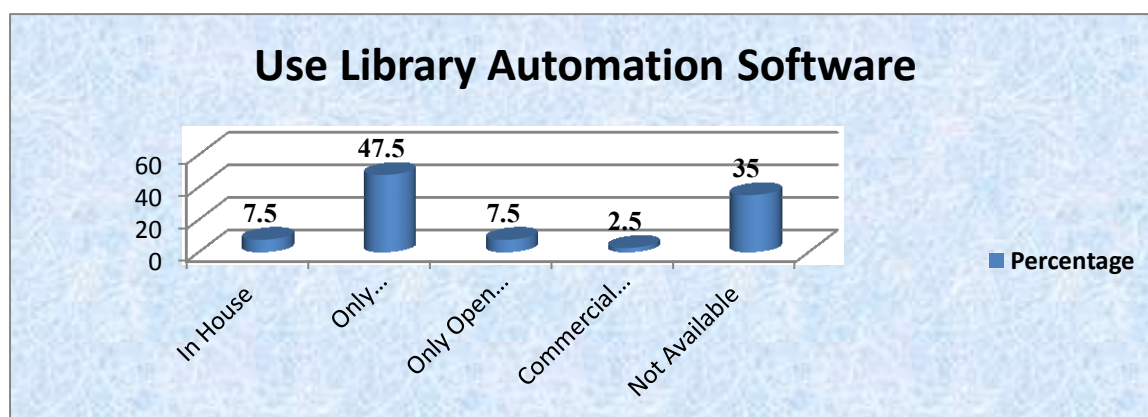


Fig. No. 1 Use Library Automation Software

The table 2 and graph 1 shows the out of 40 libraries 19 (47.5%) libraries used only commercial software, followed by 3 (7.5%) libraries have In House Software and only 1 Library have open source as well as commercial software for the library Automation, and it is observed that 14 (35%) libraries don't have any Library Automation software and all the 14 Libraries are the Self Financed College Libraries.

Table No. 3 Digital Library Software

| Sr. No | Type of Library Software | Digital Library Software | Percentage |
|--------|-------------------------------|--------------------------|------------|
| 1 | In House | 2 | 5 |
| 2 | Only Commercial | 6 | 15 |
| 3 | Only Open Source Software | 0 | 0 |
| 4 | Commercial & Open Source Both | 2 | 5 |
| 5 | Not Available | 30 | 75 |
| | Total | 40 | 100 |

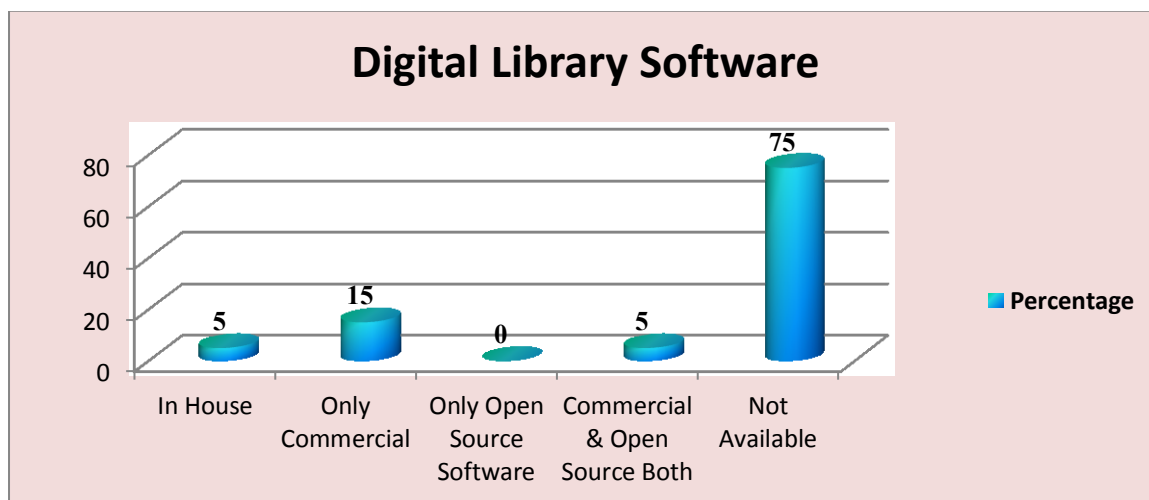
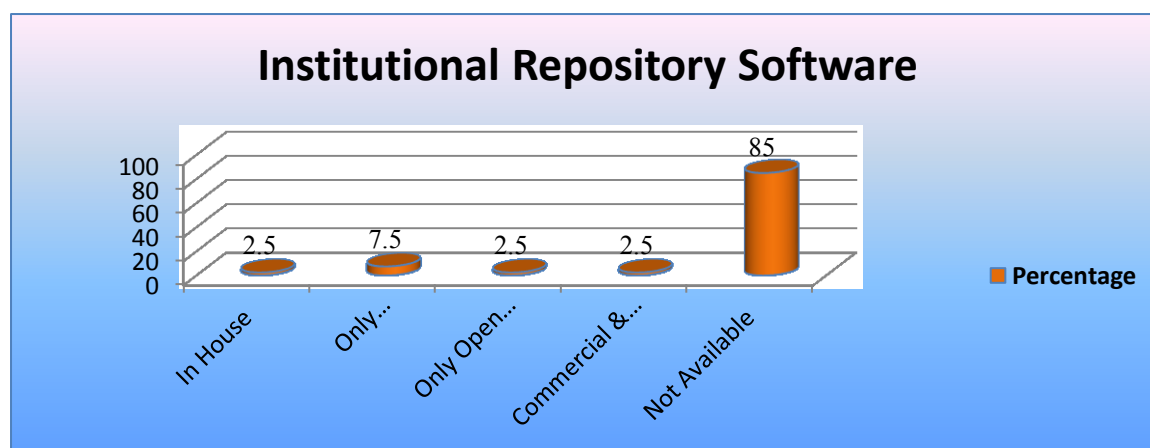


Fig.No.2 Digital Library Software

The table 3 and graph 2 shows the Availability of Digital Library Software's. It is seen that out of the total 40 libraries 6 (15%) libraries used commercial Digital library software, followed by 2 (5%) libraries have In House Software and Commercial as well as Open Source Software. And it is observed that 30 (75%) libraries don't have any digital library software.

Table No. 4 Institutional Repository Software

| Sr. No | Type of Library Software | Institutional Repository Software | Percentage |
|--------|-------------------------------|-----------------------------------|------------|
| 1 | In House | 1 | 2.5 |
| 2 | Only Commercial | 3 | 7.5 |
| 3 | Only Open Source Software | 1 | 2.5 |
| 4 | Commercial & Open Source Both | 1 | 2.5 |
| 5 | Not Available | 34 | 85 |
| | Total | 40 | 100 |

**Fig.No.3 Institutional Repository Software**

The table 4 and Fig. 3 shows the availability of Institutional Repository Software. It reveals that out of the total 40 libraries 3 (7.5%) libraries have only commercial digital library software, however only 1 (2.5%) libraries used In House software and Commercial as well as Open source software. It is observed that 34 (85%) libraries don't have any digital library software.

Table No. 5 E-Learning Software

| Sr. No | Type of Library Software | E-Learning Software | Percentage |
|--------|-------------------------------|---------------------|------------|
| 1 | In House | 1 | 2.5 |
| 2 | Only Commercial | 2 | 5 |
| 3 | Only Open Source Software | 2 | 5 |
| 4 | Commercial & Open Source Both | 0 | 0 |
| 5 | Not Available | 35 | 87.5 |
| | Total | 40 | 100 |

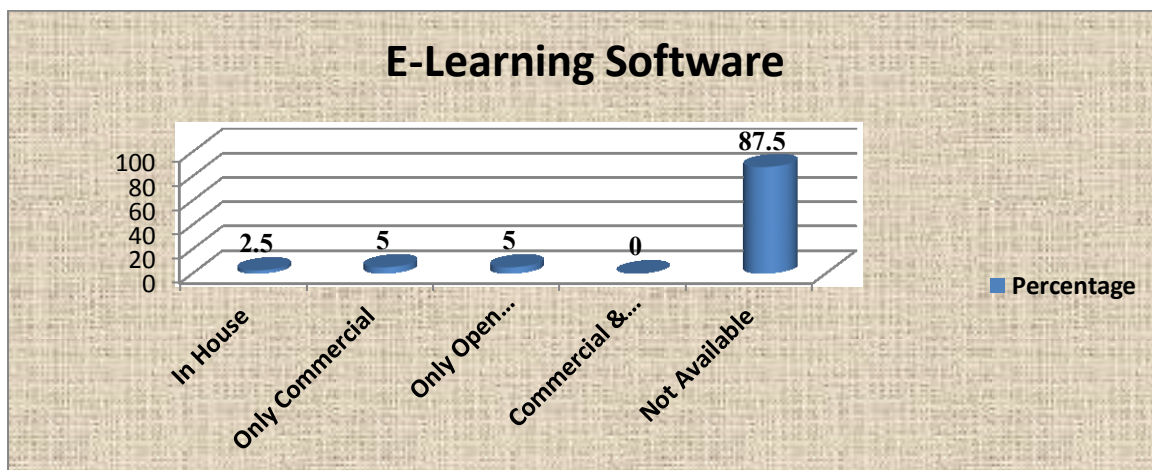


Fig. No.4 E-Learning Software

The table 5 and Fig.4 shows the Use of E-Learning Software. It reveals that out of the total 40 libraries only 2 (5%) libraries used commercial software as well as Open Source Software for the E-Learning purpose, and 35(87.5%) libraries don't used any e-learning software in their libraries.

Table No. 6 Office Automation Software

| Sr. No | Type of Library Software | Office Automation Software | Percentage |
|--------|-------------------------------|----------------------------|------------|
| 1 | In House | 1 | 2.5 |
| 2 | Only Commercial | 2 | 5 |
| 3 | Only Open Source Software | 2 | 5 |
| 4 | Commercial & Open Source Both | 0 | 0 |
| 5 | Not Available | 35 | 87.5 |
| | Total | 40 | 100 |

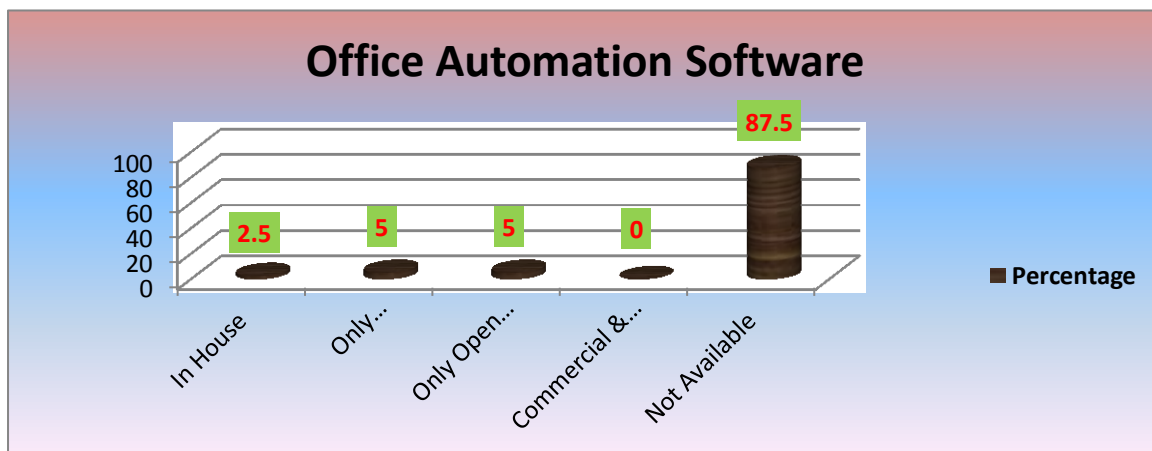


Fig.No 5 Office Automation Software

The table 6 and Fig. 5 shows the Use of Office Automation Software. It reveals that out of the total 40 libraries 2 (5%) libraries have only commercial software, followed by only 2 (5%) libraries have Open source office automation software. It is observed that 35 (87.5%) libraries not used any office automation software.

CONCLUSION:-

All libraries having computers facilities. The libraries are possessing internet connection facilities for accessing e-resources. From the study it is concluded that all the sample Agricultural libraries don't have necessary ICT infrastructure facilities to access the e-resources for the benefit of their users.

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