

A Study on Usage Level of Digital Resources and Services in University Engineering College Libraries in Rayalaseema Region of Andhra Pradesh

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1. INTRODUCTION

In today's library and information services, digital resources are considered as an integral part of information sources to provide efficient services to the information seekers. Digital resources are important research tools that complement the printed information sources in traditional library service. Digital resources are those resources which include documents in digital or electronic format that can be accessed via Internet in digital library environment. Digital resources are that electronic products that delivers a collection of data, text messages, image collection, other multimedia products like numerical, graphical mode for commercially available for library and information centres. These may be delivered on CD-ROM or DVD, over the Internet and so on. Providing access to digital resources is a service to help the library users to find out e-books, e-journals, e-conferences proceedings, e-databases, e-newsletters, e-theses/projects and web search tools on a range of topic. Many of the digital resources are freely available to anyone over Internet access but some are commercial resources.

'User study' means a study of the users of information. It deals with the kind of information required by the users, the ways and means used for searching for the required information, the use information, the use of the information obtained, the satisfaction and dissatisfaction arising from the use of information obtained, the flow of the information and the relationship of studies. It is directly linked with the effectiveness of library and information services as they aim at satisfaction of user needs. The studies relating to satisfaction of users with regard to different library resources, services and facilities provided by the libraries are useful to maximize the satisfaction of users and to improve the library services.

2. OBJECTIVES OF THE STUDY

- To find out the different types of digital resources and services used by the users
- To determine the level of usage of users towards the digital resources and services.

3. HYPOTHESIS

There would not be any significant differences in usage level of digital resources and services among the user groups of undergraduate students, post graduate students and faculty members.

4. METHODOLOGY

In order to know the usage level of digital resources and services in university engineering college libraries in rayalaseema region. There are seven university engineering colleges are available in rayalaseema region namely, SVU Engineering College Tirupati, SPMU Engineering College, Tirupati, SKU Engineering College Anantapuramu, YVU Engineering College Proddutur, JNTU Engineering College, Anantapuramu, JNTU Engineering College, Pulivendula, and JNTU Engineering College Kalikiri, the researcher has selected all the engineering colleges as sample in the first instance.

The users of the university engineering college libraries are under graduate students, post graduate students and faculty members. The total number of UG, PG and faculty members of sample colleges are 8911, 1398 and 526 respectively. In other words, the total number of users of these university college libraries is 10,835. Due to constraints of time, money and efforts involved, a total of 1328 users were selected out of 10,835 using stratified random sampling method. Out of 1328 users selected, 891 are under graduate students, 279 are post graduate students and 158 are faculty members. While selecting sample, the entire population is divided into various strata according to the University College and category of users. From each strata sample is selected by simple random method. Ten percent of the under graduate

students, 20 percent of post graduate students and 30 percent of faculty members were selected as sample. The details are given in table 1.

Table 1: Distribution of users in population and in sample according to their category and college

| S.No | Name of the College | Users | | | | | | | |
|-------|---------------------|---------------|------|---------|-------|--------|-----|---------|-------|
| | | In Population | | | | Sample | | | |
| | | UG | PG | Faculty | Total | UG | PG | Faculty | Total |
| 1 | SVUEC | 1187 | 393 | 61 | 1641 | 119 | 78 | 18 | 215 |
| 2 | SPMUEC | 1432 | 40 | 40 | 1512 | 143 | 8 | 12 | 163 |
| 3 | SKUEC | 1199 | 65 | 49 | 1313 | 120 | 13 | 15 | 148 |
| 4 | YVUEC | 940 | -- | 66 | 1006 | 94 | -- | 20 | 114 |
| 5 | JNTUECA | 1440 | 740 | 150 | 2330 | 144 | 148 | 45 | 337 |
| 6 | JNTUECP | 1513 | 160 | 109 | 1782 | 151 | 32 | 33 | 216 |
| 7 | JNTUECK | 1200 | -- | 51 | 1251 | 120 | -- | 15 | 135 |
| Total | | 8911 | 1398 | 526 | 10835 | 891 | 279 | 158 | 1328 |

5. ANALYSIS OF DATA

5.1 Usage level of the digital resources and services

The level of extent of use of the various digital resources and services, namely, e-books, e-journals, online databases, CD-ROM databases, online lectures, online public access catalogue (OPAC), college website information, and Internet offered in the library is described in the following paragraphs.

5.1.1 e-books

The distribution of users according to their level of use of e-books offered in the library is shown in Table 2.

Table 2: Distribution of users with regard to level of use of e-books

| S. No. | Level of use | Users | | | Total |
|--------|---------------|---------------------------|---------------------------|---------------------------|----------------------------|
| | | Undergraduate | Postgraduate | Faculty | |
| 1 | Completely | 395(44.33) | 108(38.71) | 61(38.61) | 564(42.47) |
| 2 | Substantially | 289(32.44) | 89(31.90) | 56(35.44) | 434(32.68) |
| 3 | Marginally | 139(15.60) | 73(26.16) | 37(23.42) | 249(18.75) |
| 4 | Not at all | 68(7.63) | 9(3.23) | 4(2.53) | 81(6.10) |
| TOTAL | | n=891 (100.00) | n=279 (100.00) | n=158 (100.00) | N=1328 (100.00) |

χ^2 (UG – PG) : 20.9357 DF: 3 TV: 7.815 Sig at 0.05 level

χ^2 (UG – FM) : 11.3549 DF: 3 TV: 7.815 Sig at 0.05 level

χ^2 (PG– FM) : 0.8478 DF: 3 TV: 7.815 NS at 0.05 level

Table 2 shows that a majority of the users (42.47%) used the e-books completely, 32.68 percent of them used substantially, 18.75 percent used marginally and 6.10 percent of them not at all used.

It is also evident from Table 2 Chi-square values that there is significant difference in the level of use of e-books between the under graduate and post graduate students one hand, and under graduate students and faculty members on the other. This mean that undergraduate students used e-books more compared to post graduate students and faculty members. However, there is no significant difference in this regard between the post graduate students and faculty members. It is proved by the χ^2 value, which is not significant at 0.05 level with three degrees of freedom.

5.1.2 e-journals

The distribution of users according to their level of use of e-journals offered in the library is shown in Table 3.

Table 3 shows that a majority of the users (44.65%) used the e-journals completely, 28.54 percent of them used substantially, 21.99 percent used marginally and 4.82 percent of them not at all used.

Table 3: Distribution of users with regard to level of use of e-journals

| S. No. | Level of use | Users | | | Total |
|--------------|---------------|---------------------------|---------------------------|---------------------------|----------------------------|
| | | Undergraduate | Postgraduate | Faculty | |
| 1 | Completely | 419(47.03) | 110(39.43) | 64(40.51) | 593(44.65) |
| 2 | Substantially | 241(27.05) | 85(30.47) | 53(33.54) | 379(28.54) |
| 3 | Marginally | 185(20.76) | 73(26.16) | 34(21.52) | 292(21.99) |
| 4 | Not at all | 46(5.16) | 11(3.94) | 7(4.43) | 64(4.82) |
| TOTAL | | n=891 (100.00) | n=279 (100.00) | n=158 (100.00) | N=1328 (100.00) |

χ^2 (UG – PG) : 7.0651 DF: 3 TV: 7.815 NS at 0.05 level
 χ^2 (UG – FM) : 3.4386 DF: 3 TV: 7.815 NS at 0.05 level
 χ^2 (PG– FM) : 1.2797 DF: 3 TV: 7.815 NS at 0.05 level

It is also evident from Table 3 Chi-square values that there are no significant differences in the level of use of e-journals among the users of under graduate, post graduate students and faculty members. It is proved by the chi-square values, which is not significant at the 0.05 level with three degrees of freedom.

5.1.3 Online databases\

The distribution of users according to their level of use of online databases offered in the library is shown in Table 4.

Table 4: Distribution of users with regard to level of use of online databases

| S. No. | Level of use | Users | | | Total |
|--------------|---------------|---------------------------|---------------------------|---------------------------|----------------------------|
| | | Undergraduate | Postgraduate | Faculty | |
| 1 | Completely | 329(36.92) | 114(40.86) | 88(55.70) | 531(39.98) |
| 2 | Substantially | 261(29.29) | 65(23.30) | 35(22.15) | 361(27.18) |
| 3 | Marginally | 174(19.53) | 51(18.28) | 22(13.92) | 247(18.60) |
| 4 | Not at all | 127(14.25) | 49(17.56) | 13(8.23) | 189(14.23) |
| TOTAL | | n=891 (100.00) | n=279 (100.00) | n=158 (100.00) | N=1328 (100.00) |

χ^2 (UG – PG) : 5.329 DF: 3 TV: 7.815 NS at 0.05 level
 χ^2 (UG – FM) : 20.2284 DF: 3 TV: 7.815 Sig at 0.05 level
 χ^2 (PG– FM) : 12.2024 DF: 3 TV: 7.815 Sig at 0.05 level

Table 4 shows that a majority of the users (39.98%) used the online databases completely, 27.18 percent of them used substantially, 18.60 percent used marginally and 14.23 percent of them not at all used.

It is also evident from Table 4 Chi-square values that there is significant difference in the level of use of online databases between the under graduate and faculty members one hand, and post graduate students and faculty members on the other. This means that faculty members used online databases more compared to under graduate and post graduate students. However, there is no significant difference in this regard between the under graduate and post graduate students. It is proved by the χ^2 value, which is not significant at 0.05 level with three degrees of freedom.

5.1.4 CD-ROM databases

The distribution of users according to their level of use of CD-ROM databases offered in the library is shown in Table 5.

Table 5: Distribution of users with regard to level of use of CD-ROM databases

| S. No. | Level of use | Users | | | Total |
|--------------|---------------|---------------------------|---------------------------|---------------------------|----------------------------|
| | | Undergraduate | Postgraduate | Faculty | |
| 1 | Completely | 397(44.56) | 121(43.37) | 69(43.67) | 587(44.20) |
| 2 | Substantially | 341(38.27) | 86(30.82) | 48(30.38) | 475(35.77) |
| 3 | Marginally | 107(12.01) | 59(21.15) | 32(20.25) | 198(14.91) |
| 4 | Not at all | 46(5.16) | 13(4.66) | 9(5.70) | 68(5.12) |
| TOTAL | | n=891 (100.00) | n=279 (100.00) | n=158 (100.00) | N=1328 (100.00) |

χ^2 (UG – PG) : 15.9079 DF: 3 TV: 7.815 Sig at 0.05 level

χ^2 (UG – FM) : 9.2341 DF: 3 TV: 7.815 Sig at 0.05 level

χ^2 (PG– FM) : 0.2627 DF: 3 TV: 7.815 NS at 0.05 level

Table 5 shows that a majority of the users (44.20%) used the CD-ROM databases completely, 35.77 percent of them used substantially, 14.91 percent used marginally and 5.12 percent of them not at all used.

It is also evident from Table 5 Chi-square values that there is significant difference in the level of use of CD-ROM databases between the under graduate and post graduate students one hand, and under graduate students and faculty members on the other. This mean that undergraduate students used CD-ROM databases more compared to faculty members and post graduate students. However, there is no significant difference in this regard between the post graduate students and faculty members. It is proved by the χ^2 value, which is not significant at 0.05 level with three degrees of freedom.

5.1.5 Online lectures

The distribution of users according to their level of use of online lectures offered in the library is shown in Table 6.

Table 6: Distribution of users with regard to level of use of online lectures

| S. No. | Level of use | Users | | | Total |
|--------------|---------------|---------------------------|---------------------------|---------------------------|----------------------------|
| | | Undergraduate | Postgraduate | Faculty | |
| 1 | Completely | 419 (47.03) | 120 (43.01) | 87 (55.06) | 626 (47.14) |
| 2 | Substantially | 291 (32.66) | 96 (34.41) | 36 (22.78) | 423 (31.85) |
| 3 | Marginally | 134 (15.04) | 46 (16.49) | 23 (14.56) | 203 (15.29) |
| 4 | Not at all | 47 (5.27) | 17 (6.09) | 12 (7.59) | 76 (5.72) |
| TOTAL | | n=891 (100.00) | n=279 (100.00) | n=158 (100.00) | N=1328 (100.00) |

χ^2 (UG – PG) : 1.4896 DF: 3 TV: 7.815 NS at 0.05 level

χ^2 (UG – FM) : 7.3007 DF: 3 TV: 7.815 NS at 0.05 level

χ^2 (PG– FM) : 8.1865 DF: 3 TV: 7.815 NS at 0.05 level

Table 6 shows that a majority of the users (47.14%) used the online lectures completely, 31.85 percent of them used substantially, 15.29 percent used marginally and 5.72 percent of them not at all used.

It is also evident from Table 6 Chi-square values that there are no significant differences in the level of use of online lectures among the users of under graduate, post graduate students and faculty members. It is proved by the chi-square values, which is not significant at the 0.05 level with three degrees of freedom.

5.1.6 OPAC

The distribution of users according to their level of use of online public access catalogue offered in the library is shown in Table 7.

Table 7: Distribution of users with regard to level of use of OPAC

| S. No. | Level of use | Users | | | Total |
|--------------|---------------|---------------------------|---------------------------|---------------------------|----------------------------|
| | | Undergraduate | Postgraduate | Faculty | |
| 1 | Completely | 354(39.73) | 115(41.22) | 78(49.37) | 547(41.19) |
| 2 | Substantially | 332(37.26) | 79(28.31) | 52(32.91) | 463(34.87) |
| 3 | Marginally | 138(15.49) | 71(25.45) | 22(13.93) | 231(17.39) |
| 4 | Not at all | 67(7.52) | 14(5.02) | 6(3.79) | 87(6.55) |
| TOTAL | | n=891 (100.00) | n=279 (100.00) | n=158 (100.00) | N=1328 (100.00) |

χ^2 (UG – PG) : 18.6776 DF: 3 TV: 7.815 Sig at 0.05 level
 χ^2 (UG – FM) : 6.6069 DF: 3 TV: 7.815 NS at 0.05 level
 χ^2 (PG– FM) : 8.8505 DF: 3 TV: 7.815 Sig at 0.05 level

Table 7 shows that a majority of the users (41.19%) used the online public access catalogue completely, 34.87 percent of them used substantially, 17.39 percent used marginally and 6.55 percent of them not at all used.

It is also evident from Table 7 Chi-square values that there is significant difference in the level of use of OPAC between the under graduate and post graduate students one hand, and post graduate students and faculty members on the other. This means that faculty members used OPAC more compared to post graduate and under graduate students. However, there is no significant difference in this regard between the under graduate and post graduate students. It is proved by the χ^2 value, which is not significant at 0.05 level with three degrees of freedom.

5.1.7 College website

The distribution of users according to their level of use of college website information offered in the library is shown in Table 8.

Table 8: Distribution of users with regard to level of use of college website

| S. No. | Level of use | Users | | | Total |
|--------------|---------------|---------------------------|---------------------------|---------------------------|----------------------------|
| | | Undergraduate | Postgraduate | Faculty | |
| 1 | Completely | 452(50.73) | 135(48.39) | 92(58.23) | 679(51.13) |
| 2 | Substantially | 280(31.43) | 83(29.75) | 47(29.75) | 410(30.87) |
| 3 | Marginally | 159(17.85) | 61(21.86) | 19(12.03) | 239(18.00) |
| TOTAL | | n=891 (100.00) | n=279 (100.00) | n=158 (100.00) | N=1328 (100.00) |

χ^2 (UG – PG) : 2.2496 DF: 2 TV: 5.991 NS at 0.05 level
 χ^2 (UG – FM) : 4.255 DF: 2 TV: 5.991 NS at 0.05 level
 χ^2 (PG– FM) : 7.2143 DF: 2 TV: 5.991 Sig at 0.05 level

Table 7 shows that a majority of the users (51.13%) used the college website completely, 30.87 percent of them used substantially and 18 percent used marginally.

It is also evident from Table 7 Chi-square values that there is no significant difference in the level of use of college website between the under graduate and post graduate students one hand, and under graduate students and faculty members on the other. It is proved by the χ^2 value, which is not significant at 0.05 level with two degrees of freedom. However, there is significant difference in this regard between the post graduate students and faculty members. This means that faculty members used college website more compared to post graduate students.

5.1.8 Internet

The distribution of users according to their level of use of internet offered in the library is shown in Table 9.

Table 9: Distribution of users with regard to level of use of Internet

| S. No. | Level of use | Users | | | Total |
|--------|---------------|----------------------|----------------------|----------------------|-----------------------|
| | | Undergraduate | Postgraduate | Faculty | |
| 1 | Completely | 517(58.02) | 146(52.33) | 77(48.73) | 740(55.72) |
| 2 | Substantially | 298(33.45) | 116(41.58) | 69(43.67) | 483(36.37) |
| 3 | Marginally | 76(8.53) | 17(6.09) | 12(7.59) | 105(7.91) |
| TOTAL | | n=891(100.00) | n=279(100.00) | n=158(100.00) | N=1328(100.00) |

χ^2 (UG – PG) : 6.7732 DF: 2 TV: 5.991 Sig at 0.05 level
 χ^2 (UG – FM) : 6.1962 DF: 2 TV: 5.991 Sig at 0.05 level
 χ^2 (PG– FM) : 0.7028 DF: 2 TV: 5.991 NS at 0.05 level

Table 9 shows that a majority of the users (55.72%) used internet completely, 36.37 percent of them used substantially and 7.91 percent used marginally.

It is also evident from Table 9 Chi-square values that there is significant difference in the level of use of internet between the under graduate and post graduate students one hand, and under graduate students and faculty members on the other. This means that under graduate students used internet more compared to post graduate students and faculty members. However, there is no significant difference in this regard between the post graduate students and faculty members. It is proved by the χ^2 value, which is not significant at 0.05 level with two degrees of freedom.

5.1.9 Overall usage level of digital resources and services

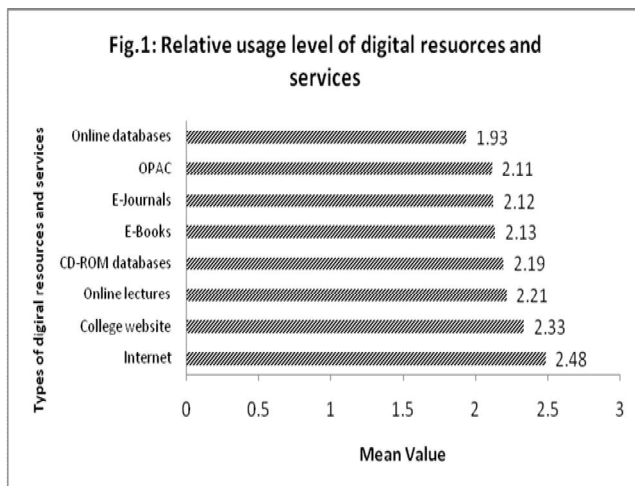
In order to know the overall usage level of various digital resources and services by the users of selected libraries, responses of completely, substantially, marginally and not at all used are assigned the weightages of 3, 2, 1 and 0 respectively. The total weightage and mean weightage is calculated for each digital resource and service. Each digital resource and service has been ranked on the basis of its mean weightage.

Table 10 shows the ranks given to various digital resources and services by the users for their usage level, also illustrated in Fig. 1.

It is evident from Table 10 and Fig.1 that users prefer using the Internet heavily compared to other digital resources and services. It is followed by college website, online lectures, CD-ROM databases and E-books, which have got second, third, fourth and fifth ranks respectively. Online databases are the least used among the digital resources. Whereas, online public access catalogues and E-journals have got the seventh and eighth ranks respectively for their usage.

Table 10: Relative usage level of digital resources and service

| S.No | Digital resources | Total weightage | Mean | Rank |
|------|-------------------|-----------------|------|------|
| 1 | Internet | 3291 | 2.48 | 1 |
| 2 | College website | 3096 | 2.33 | 2 |
| 3 | Online lectures | 2927 | 2.21 | 3 |
| 4 | CD-ROM databases | 2909 | 2.19 | 4 |
| 5 | E-Books | 2829 | 2.13 | 5 |
| 6 | E-Journals | 2809 | 2.12 | 6 |
| 7 | OPAC | 2798 | 2.11 | 7 |
| 8 | Online databases | 2562 | 1.93 | 8 |



6. FINDINGS

The following are the findings obtained from the analysis of data collected from users of university engineering college libraries.

1. Majority of the users (42.47%) used the e-books completely. Undergraduate students used e-books more compared to post graduate students and faculty members. There is no significant difference in this regard between the post graduate students and faculty members.
2. Majority of the users (44.65%) used the e-journals completely. There are no significant differences in the level of use of e-journals among the users of under graduate, post graduate students and faculty members.
3. Majority of the users (39.98%) used the online databases completely. Faculty members used online databases more compared to under graduate and post graduate students. There is no significant difference in this regard between the under graduate and post graduate students.
4. Majority of the users (44.20%) used the CD-ROM databases completely. Undergraduate students used CD-ROM databases more compared to faculty members and post graduate students. There is no significant difference in this regard between the post graduate students and faculty members.
5. Majority of the users (47.14%) used the online lectures completely. There are no significant differences in the level of use of online lectures among the users of under graduate, post graduate students and faculty members.
6. Majority of the users (41.19%) used the online public access catalogue completely. Faculty members used OPAC more compared to post graduate and under graduate students. There is no significant difference in this regard between the under graduate and post graduate students.
7. Majority of the users (51.13%) used the college website completely. Faculty members used college website information more compared to post graduate students. There is no significant difference in the level of use of college website between the under graduate and post graduate students one hand, and under graduate students and faculty members on the other.
8. Majority of the users (55.72%) used internet completely. Under graduate students used internet more compared to post graduate students and faculty members. There is no significant difference in this regard between the post graduate students and faculty members.
9. The users prefer using the Internet heavily compared to other digital resources and services. It is followed by college website, online lectures, CD-ROM databases and E-books, which have got second, third, fourth and fifth ranks respectively. Online databases are the least used among the digital resources. Whereas, online public access catalogues and E-journals have got the seventh and eighth ranks respectively for their usage.

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