

## SIGNIFICANCE ROLE OF DIGITAL RESOURCES AMONG THE ENGINEERING COLLEGE LIBRARY USERS IN COIMBATORE DISTRICT: A CASE STUDY

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### ABSTRACT

*The purpose of study is to provide the findings of a survey that was done to analyse how teachers and students are using electronic resources. in the Coimbatore District engineering colleges are using electronic resources. This paper presents the findings from a questionnaire-based survey that was carried out at a few chosen engineering colleges in the Coimbatore region. Analysis was done on the information that was obtained from the respondents via the questionnaires. Thus, the study amply has shown how engineering college library users effectively use e-resources. The study's findings will be beneficial in increasing library utilisation. The information gathered from the respondents via surveys was analysed. A randomly chosen sample of 1132 received the questionnaire from users. Only 1132 from 1263 questions were determined to be appropriate for this study, correspondingly representing the U. G., P. G., and Faculties are 452, 287, and 393. The findings reveal that library users how to effectively used the e-resources in engineering colleges at Coimbatore regional.*

**KEYWORDS:** *Electronics materials, Online class, Engineering Education, Academic Libraries. Learning method, Search engine, Download process*

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### INTRODUCTION

Libraries are the hub of all educational institutions and are sources of information for their users. The use of digital resources in institution is becoming increasingly important. To gives good service to library users, educational institutions must spend more money on subscriptions to electronic resources. The fifth law, which states that libraries are living, breathing, and evolving entities, predicts that libraries will continue to update in the future (Ranganathan, 1931). The staff members of the library have an obligation to comprehend the ways in which e-resources are utilised and how they might enhance the user's experience. To find out how academics and students used e-resources across fields, this study conducted surveys with both groups. E: The processes of teaching, research, and learning depend on resources. It's thought that engineering students use the resource database more frequently. The accessibility of electronic information opens up new

avenues for education, learning, and research. The capacity of educational institutions to store, retrieve, and send information using electronic devices is one of its many advantageous features.

Libraries are the locations where one can find information in various formats. Information was previously exclusively available to users in paper form, but it is now available in a variety of digital formats. With the advancements of ICT, there has been a revolutionary shift in information circumstances. With the proliferation of digital information, libraries are presently the location of numerous digital contents. The ease of access to information via the internet has led to an increased importance of these electronic resources. Academics, investigators, and learners require resources that yield benefits and conserve their valuable time. Libraries work hard in this area. Libraries work to retrieve information from these electronic resources as well.

## **METHODOLOGY**

Purpose of study is to provide that was done to analyse how teacher and students are using electronic resources in the Coimbatore District engineering colleges at Coimbatore District. This paper presents the findings from a questionnaire-based survey that was carried out at a few chosen engineering colleges in the Coimbatore region. Analysis was done on the information that was obtained from the respondents via the questionnaires. Thus, the study amply has shown how engineering college library customers effectively use e-resources. The study's findings will be beneficial in increasing library utilisation. The information gathered from the respondents via surveys was analysed. A randomly chosen sample of 1132 received the questionnaire from users. Only 1132 from 1263 questions were determined to be appropriate for this study, correspondingly representing the U. G., P. G., and Faculties are 452, 287, and 393. The findings reveal that library users how to effectively used the e-resources in engineering colleges at Coimbatore regional.

The studies look on how engineering college library users in Coimbatore regional area use e-resources after doing an objective analysis of the data. The study concentrated on U.G. and P.G. students and faculty members who use engineering institutions' e-resources the most frequently. It is advised that library and information professionals use a variety of approaches and strategies to determine the information needs of various user groups. The survey strategy is one of the most effective research methodologies.

## **REVIEW OF LITERATURE**

Researchers Venkateswarlu and Raja Suresh Kumar (2024) examined how students and teachers used electronic information resources. To gather information for this study, a questionnaire was distributed to instructors and students. The survey enquired about their utilisation of digital information sources, their contentment with the library's services, the process of locating pertinent data, their degree of satisfaction with the results obtained from their searches, and any apprehensions or recommendations they might have.

Adeleke and Emeahara (2023) found that postgraduate students at the University of Ibadan utilised e-resources, particularly full text databases, at a low level. This indicates that the students need to improve their proficiency in using computers and related skills like database management, desktop publishing, web page design, and programming to effectively navigate in an electronic environment. It is clear that in order for postgraduate students to improve the calibre of their academic and research output, stakeholders must help them develop the necessary electronic information literacy skills and grant them unrestricted access to the plethora of digital information sources.

According to research by Akussah, Asante, and Adu-Sarkodee (2022), the four contracts (satisfaction level, chosen database, time and frequency, and degree of awareness) of the electronic resources revealed a considerable positive link with utilisation among the users. Among other recommendations made by the authors, one should be that the concerned institution use more dynamic marketing strategies to inform and increase awareness of the electronic resources' availability. Faculty seminars, new student orientation, user email lists, circulars, memos, and word-of-mouth marketing are a few examples of these strategies.

According to Gorla (2021), Indian libraries can now access a wide variety of scholarly international e-journals via a consortium strategy. However, in order to optimise e-resources with the least amount of work, each user needs to be familiar with the newest technology. The author has provided an overview of several strategies for making efficient use of electronic resources, which are highly beneficial to users researchers and academics in particular.

In order to locate electronic resources, Madhusudhan (2019) conducted a survey among educators, researchers, and students at universities and research institutions. According to 78% of the respondents, their research work has become very dependent on the UGC-Infonet e-journals. They required electronic document supply services as well as current article alert services.

Dange, et al. (2018) conducted a study on postgraduate students at Kuvempu University's utility of digital access. The results demonstrated a large difference in the understanding e – resources utilisation. Furthermore, there is a discernible difference between students studying education, science, and the arts in terms of their comprehension of digital information sources, digital information services, and use of these resources. Essentially, everything of the research that was previously addressed assumes that using electronic resources is highly desirable. The outcome is higher productivity in work, learning, teaching, and research.

S. M. Ahmed (2016) Provide two public institutions in Bangladesh that offer specialised curriculum in order to assess how students use e - resources and how satisfied they are with the resources that they have subscribed to. A standardised questionnaire was used to assess how well the students used and felt about the electronic resources they had subscribed to through the institution. They also mentioned the primary problems they encountered when trying to access online information.

In the 1980s, when libraries started to use computers and improved telecommunications to satisfy the requirements of users who were seeking increasingly complicated information, the concept of a library extension gained additional significance.

### **Goals for the Research**

- To investigate how and why electronic resources are used.
- To ascertain the frequency of utilisation of electronic resources.
- To determine the challenges posed by employing electronic resources.
- To find out how content users are with online resources' accessibility.
- To research how satisfied users are with using online resources.

## INFORMATION ANALYSIS

Analysis cannot proceed without interpretation, and interpretation cannot proceed without analysis. Therefore, both rely on one another. In keeping with the above specified goals, a thorough analysis of the data that was acquired has been provided and discussed in this paper.

**U.G – 452/500, P.G – 287/338, and Faculties – 393/425, total 1132/1263**

**Table 1**

UG	Total	Response	Percentage	PG Total	Response	Percentage
Male	280	245	54.20	192	173	60.28
Female	220	207	45.80	146	114	39.72
	500	452	100.00	338	287	100.00

**Table 2**

Faculties	Total	Response	Percentage
Male	250	238	55.95
Female	175	155	44.05
Total	425	393	100.00

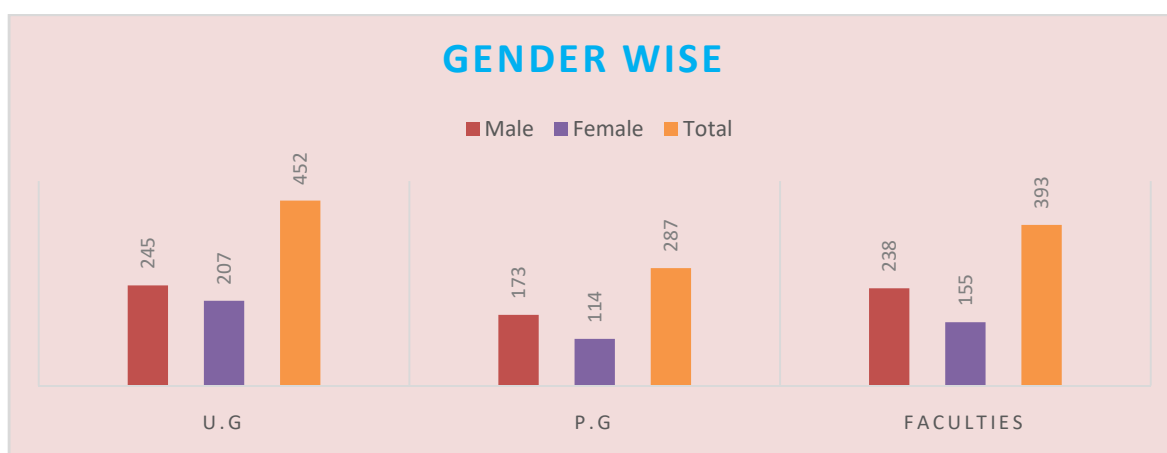
**Table 3: Respondent in Gender Wise**

Gender	Undergraduate		Postgraduate		Faculties	
	No. of Respondent	Percentage	No. of Respondent	Percentage	No. of Respondent	Percentage
Male	245	54.20	173	60.28	238	60.56
Female	207	45.80	114	39.72	155	39.44
Total	452	100.00	287	100.00	393	100.00

This table displays the Gender-wise Distribution of Respondents.

- In U.G students 245 respondents (54.20%) are male whereas 207 respondents (45.80%) are female.
- In P.G students 173 respondents (60.28%) are male whereas 114 respondents (39.72%) are female.
- In faculties 238 respondents (60.56%) are male whereas 155 respondents (39.44%) are female.

Therefore, in certain engineering colleges in the Coimbatore District, more male respondents than female respondents use the electronic resources.



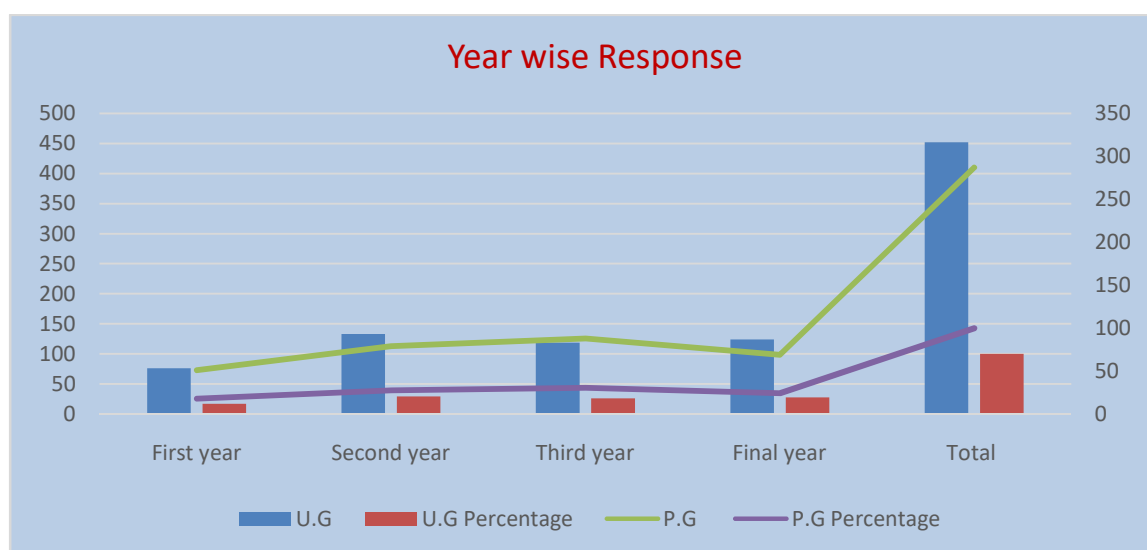
**Figure 1**

**Table 4: Response in Year Wise**

Year	Undergraduate		Postgraduate	
	No. of Respondent	Percentage	No. of Respondent	Percentage
First year	76	16.81	51	17.77
Second year	133	29.43	79	27.53
Third year	119	26.33	88	30.66
Final year	124	27.43	69	24.04
	452	100.00	287	100.00

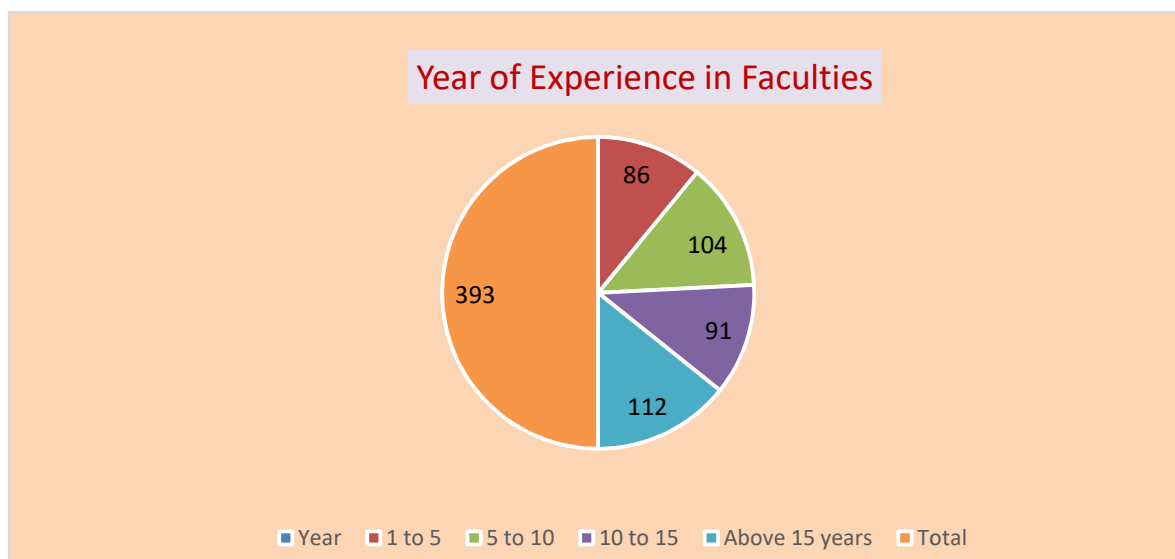
**Table 4:** First year 76 (16.81), Second year 133 (29.43), Third year 119 (26.33), Final year 124 (27.43) undergraduate students are access e - resources.

First year 51 (17.77), Second year 79 (27.53), Third year 88 (30.66), Final year 69 (24.04) undergraduate students are access e - resources.

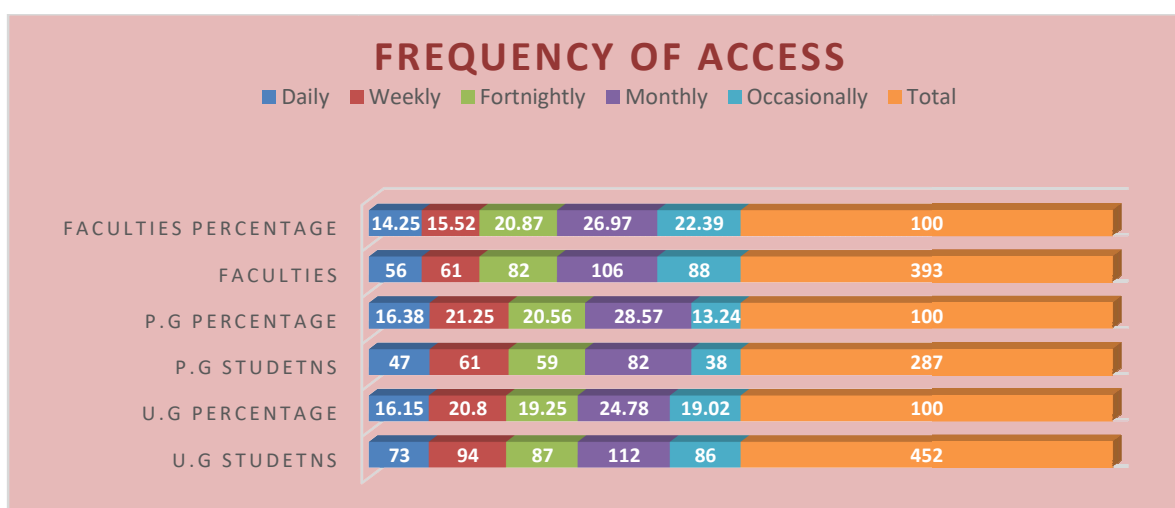
**Figure 2****Table 5: Year of Experience (Faculties)**

Year of Experience in Teaching professional	Faculties	
	No. of Respondent	Percentage
1 to 5	86	21.88
5 to 10	104	26.46
10 to 15	91	23.16
Above 15 years	112	28.50
Total	393	100.00

**Table 5:** up to 5 years of experience facilities 86 (21.88), up to 10 years of experience facilities 104 (26.46), up to 15 years of experience facilities 91 (23.16) and above 15 years of experience facilities 112 (28.50) are access e – resources.

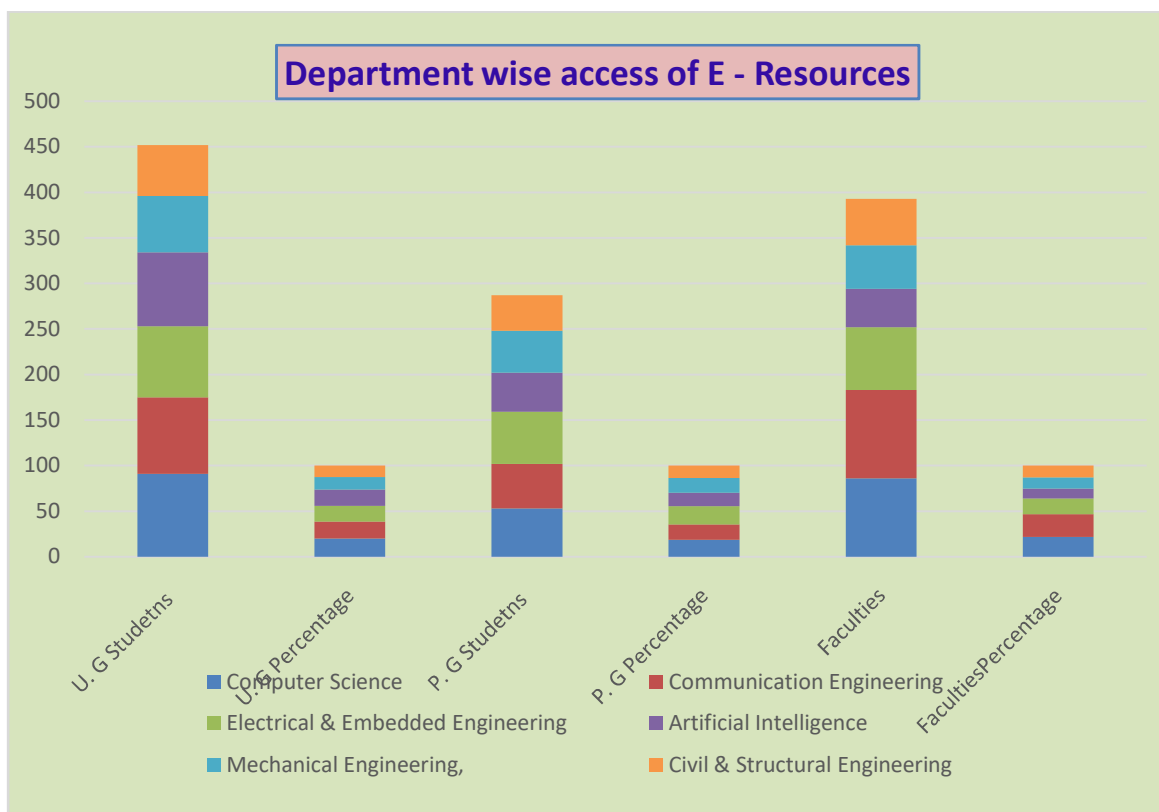
**Figure 3****Table 6: Frequency of Access E - Resources**

Frequency	Undergraduate		Postgraduate		Faculties	
	No. of Respondent	Percentage	No. of Respondent	Percentage	No. of Respondent	Percentage
Daily	73	16.15	47	16.38	56	14.25
Weekly	94	20.80	61	21.25	61	15.52
Fortnightly	87	19.25	59	20.56	82	20.87
Monthly	112	24.78	82	28.57	106	26.97
Occasionally	86	19.02	38	13.24	88	22.39
Total	452	100.00	287	100.00	393	100.00

**Figure 4**

**Table 7 Department Wise Access E - Resources**

Course wise	Undergraduate		Postgraduate		Faculties	
	No. of Respondent	Percentage	No. of Respondent	Percentage	No. of Respondent	Percentage
Computer Science	91	20.13	53	18.47	86	21.88
Communication Engineering	84	18.58	49	17.07	97	24.68
Electrical & Embedded Engineering	78	17.26	57	19.86	69	17.56
Artificial Intelligence	81	17.92	43	14.98	42	10.69
Mechanical Engineering,	62	13.72	46	16.03	48	12.21
Civil & Structural Engineering	56	12.39	39	13.59	51	12.98
Total	452	100.00	287	100.00	393	100.00

**Figure 5****Table 8: Purpose Access of E - Resources**

S. No	Purpose	No. of Respondent U. G	Percentage	No. of Respondent P. G	Percentage	No. of Respondent Faculties	Percentage
1	Publication of papers	132	29.20	81	28.22	113	28.75
2	Studying course work	97	21.46	66	23.00	81	20.61
3	Research / Project work	108	23.90	59	20.56	94	23.92
4	Updating knowledge	72	15.93	43	14.98	58	14.76
5	Any other works	43	09.51	38	13.24	47	11.96
6	Total	452	100.00	287	100	393	100.00

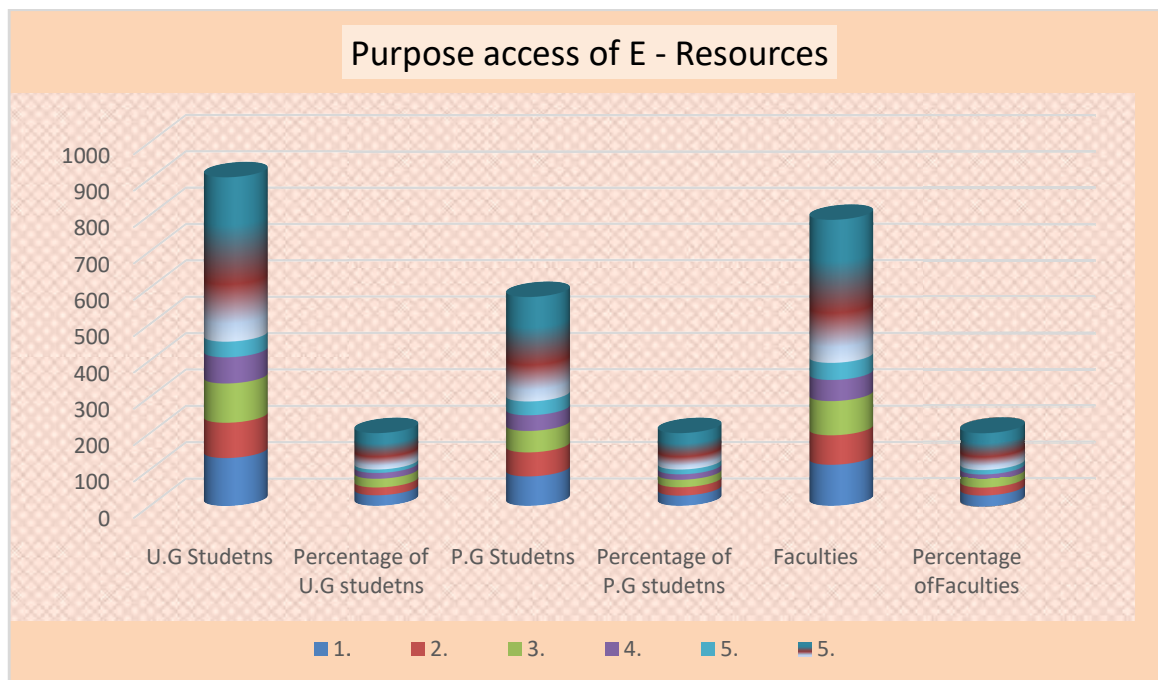


Figure 6

### Chi - Square Statistic Test for Purpose of access the E – Resources

The Chi-Square Test is used to ascertain whether the observed results agree with the predicted values. When the variable under study is a categorical variable and the data to be analysed comes from a random sample, Chi-Square is the optimal test to use. The Chi-square test is the most often used technique for evaluating this kind of data. Information from survey responses can be examined with the use of this type of analysis.

Table 9

Purpose	U. G	P. G	Faculties	Total
Publication of papers	132	81	113	326
Studying course work	97	66	81	244
Research / Project work	108	59	94	261
Updating knowledge	72	43	58	173
Any other works	43	38	47	128
Total	452	287	393	1132

$$\text{Expected Value (E}_1\text{)} = (\text{Row total}) \times (\text{Column total})$$

Total Number of Observations

$$E_1 = 326 \times 452 / 1132 = 130.1696113$$



**Table 10**

O	E	O - E	O - E <sup>2</sup>	O-E <sup>2</sup> /E
132	130.1696113	1.830389	3.350322766	0.025738133
97	97.42756184	-0.42756	0.182809125	0.001876359
108	104.2155477	3.784452	14.32207919	0.137427471
72	69.07773852	2.922261	8.539612181	0.123623216
43	51.10954064	-8.10954	65.76464933	1.286739198
81	82.65194346	-1.65194	2.728917205	0.033016976
66	61.86219081	4.137809	17.12146487	0.276767839
59	66.17226148	-7.17226	51.4413348	0.777385171
43	43.86130742	-0.86131	0.741850473	0.016913551
38	32.45229682	5.547703	30.77701058	0.948376959
113	113.1784452	-0.17845	0.0318427	0.00028135
81	84.71024735	-3.71025	13.7659354	0.162506141
94	90.61219081	3.387809	11.47725109	0.126663432
58	60.06095406	-2.06095	4.247531652	0.070720349
47	44.43816254	2.561837	6.56301115	0.147688626
				<b>4.135724771</b>

Degrees of Freedom = (column-1) (row-1) = (5-1) × (3-1) = 8
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Use the chi-square distribution table to find the critical value for the given df and significance level (usually 0.05).

Calculated Value	4.14
Table Value (8, 0.05)	15.507
Accepted	15.507 > 4.14

The resulting statistic is then finally compared to the crucial statistic listed in the chi-square table. Accepting the null hypothesis, the critical statistic of 15.507 is larger than the acquired statistic, with an alpha level of 0.05 and two degrees of freedom. This is bigger than the calculation value of 4.14 from the data.

**Table 11: Problems While using E - Resources**

S. No	Problems	No. of Respondent U. G	Percentage	No. of Respondent P. G	Percentage	No. of Respondent Faculties	Percentage
1	Poor Connectivity (Slow Speed)	104	23.02	63	21.95	98	24.94
2	Difficulty in finding relevant information	97	21.46	59	20.56	84	21.37
3	Library time is not suitable	43	09.51	29	10.11	57	14.50
4	Lack of system admin team	51	11.28	37	12.89	43	10.95
5	Non availability of full access Subscription	76	16.81	67	23.34	72	18.32
6	File format and update latest software	81	17.92	32	11.15	39	09.92
7	Total	452	100.00	287	100.00	393	100.00

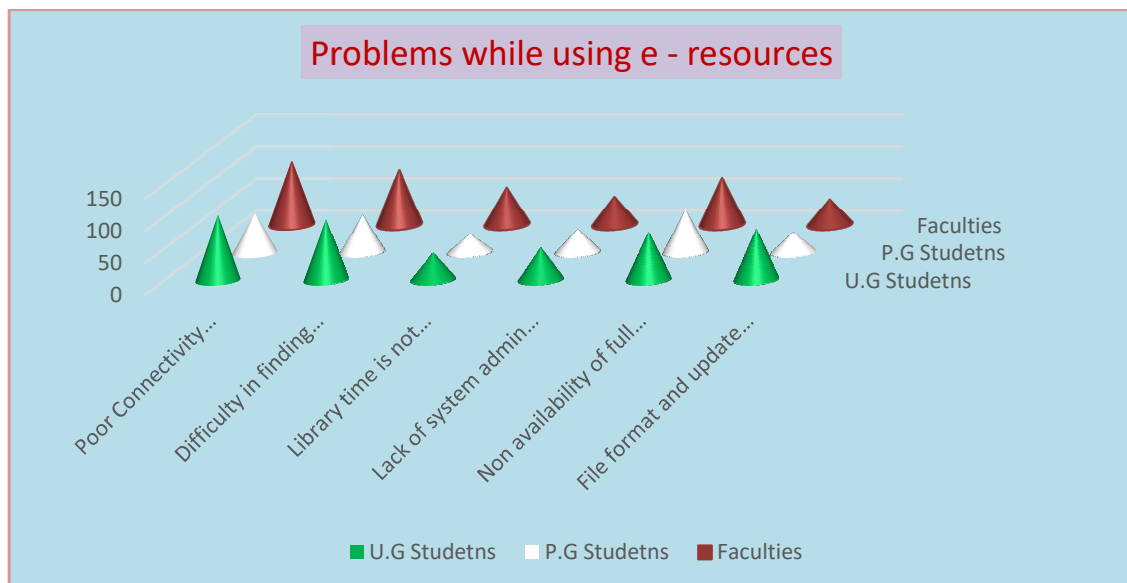


Figure 7

### Anova Test for Problem using E - Resources

Analysis of variance, or ANOVA, is a statistical significance test used in hypothesis testing that establishes whether or not the null hypothesis may be rejected. It is used to investigate differences between group means using particular estimating procedures.

T	Total of all 18 numbers	452+287+393 = <b>1132</b>
T <sup>2</sup>	1132*1132	1281424
T <sup>2</sup> /N	1281424/18	71190.22222

Sum of Square of between column=  $SSC = (x_1)^2/N_1 + (x_2)^2/N_2 + (x_3)^2/N_3 - T^2/N$

$$SSC = 452^2/6 + 287^2/6 + 393^2/6 - 71190.22$$

$$SSC = 2330.11$$

Sum of Square of Total SST =  $x_1^2 + x_2^2 + x_3^2 + \dots + x_n^2 - T^2/N$

$$SST = 104^2 + 97^2 + 43^2 + \dots + x_n^2 - T^2/N$$

$$SST = 80648 - 71190.22$$

$$SST = 9457.78$$

Sum of Square of Error SSE = SST – SSC

$$SSE = 9457.78 - 2330.11$$

$$SSE = 7127.67$$

$$F = MSC/MSE$$

F=ANOVA coefficient

MSC= mean squares of column

MSE=Mean squares of error

## Formula Table

**Table 12**

Square of Variation	Sum of the Squares	Degree of Freedom	Mean Sum of the Square	Variation of F
Between samples	SSC	$V_1 = C - 1$ $C = \text{Column}$ $V_1 = 6 - 1$ $V_1 = 5$	$MSC = SSC / V_1$	$F = MSC / MSE$
Within samples	SSE	$V_2 = (N - 1) - V_1$	$MSE = SSE / V_2$	

**Table 13**

Square of variation	Sum of the squares	Degree of freedom	Mean sum of the square	Variation of F
Between samples	2330.11	$V_1 = (6-1)$ 5	$MSC = 2330.11/5$ 466.022	$F = MSC/MSE$
Within samples	7127.67	$V_2 = (18-1) - 5$ $V_2 = 12$	$MSE = 7127.67/ 12$ 593.972	$F = 466.022/593.972$ $= 0.79$

Critical Region

ANOVAs Table Value (5, 12) = 3.11

Table value > Calculate value = 3.11 > 0.79

The result of this ratio provides a figure that finally supports the null hypothesis by illustrating the difference between the within-group and between-group variances.

## DISCUSSION

- E-resources comprise a range of digital assets such as e-books, online journals, databases, multimedia content, and instructional websites, offering a plethora of knowledge to educators and students at their fingertips.
- It is necessary to regularly update management-based library services to meet the ever-changing needs of library users.
- E-resource consortia: As a result of cooperative efforts amongst educational institutions, these organisations were established, giving their member colleges lower expenses and access to a greater variety of digital resources.
- E-resources enable knowledge exchange with peers globally and dissolve geographical barriers, facilitating international collaboration between students and instructors. Institutions must ensure full compliance with copyright laws and licensing agreements while providing access to intellectual items.

## CONCLUSION

E-resources have had a significant impact on research, changing the nature of scholarly inquiry and completely altering the ways in which researchers access, share, and collaborate on knowledge. Researchers now have unparalleled access to a wide range of scholarly materials thanks to e-resources, which speeds up the research process and makes it possible to examine several points of view. Scientific advancement has been expedited through interdisciplinary research and the ability to interact and collaborate across geographical and academic boundaries. Moreover, electronic resources have made data analysis, visualisation, and preservation easier, guaranteeing the accessibility and long-term availability of research findings. Knowledge has advanced as a result of the promotion of open science and open access efforts, which have raised

the profile and effect of research. Using e-resources will continue to be crucial in promoting innovation, teamwork, and the hunt for new findings within the research community as technology advances. The analysis makes it abundantly evident that every engineering student has access to electronic information resources. Students gain by using e-resources since they may obtain current information.

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