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Information seeking Behavior of Faculty Members and Students in Colleges of Kashmir Region: Ellis Model Approach

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Information seeking Behavior of Faculty Members and Students in Colleges of Kashmir Region: Ellis Model Approach

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<u>Abstract</u>

The present era of knowledge advancement, decision making, avoidance of duplication in efforts and technology transfer. Information is a key issue to deal with. The real challenge is not producing or storing information but disseminates it to the proper ends is the real challenge. Although users in academic Libraries are continuously adapting and seeking effective ways to respond to the fundamental and interconnected missions of study, teaching and community service, and that is why some have embraced the use of the Internet in obtaining information. The paper highlights some information seeking models to assist students in their search for information on the Internet. Also it highlights the role of the library in the information seeking process of students. The paper concludes that though Information and communication technologies are being put in place for use by students, they must possess the requisite skill to use them appropriately.

Keywords: Information, Information need, Models, Ellis, Users.

Introduction

The term information seeking behavior (ISB) has been used in the literature since 1950's. As a way of gathering and sourcing of information for personal use, knowledge updating and overall development. Hence can be considered asconscious effort among individuals to acquire information in response to a need or gap in one's knowledge **(Case, 2002).**In order to change their (humans) state of knowledge **(Marchionini, 1995).**In other words involves activities in which a person may engage himself, identifying, searching, using or transferring information and constitutes the process of information seeking (**Wilson, 1999)**. Although Information-seeking behavior begins when one realizes the existence of an information need and ends when that need is believed to have been satisfied **(Krikelas, 1983).**Thus Information seeking is an essential part of every one's life. E.g., users (teachers/students) in an academic sphere need to find relevant information assess the quality and use it (information) according to their relevance/needs. Similarly, collection of information is strategically important to every person's day to day activities and, by nature, requires complete interaction with the information.

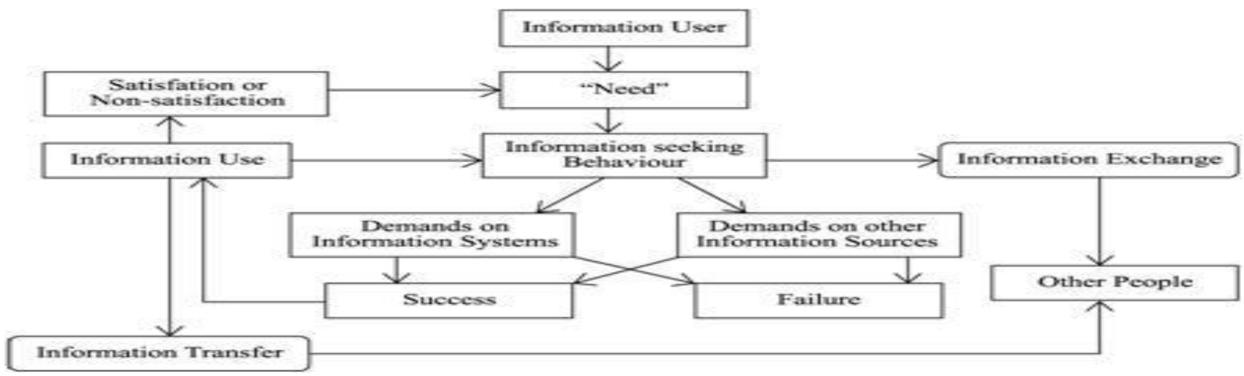
Information seeking behavior among users

Hiller (2002) carried out a study to measure the satisfaction of faculty and students with library services the study investigated the importance of resources, the reasons for the use or non use of libraries, information resources and focused on the difference as well as similarities between scientists/engineers and other academic areas in their library use and information needs. The survey population included all faculties and random samples of graduate students. Questionnaire method was used for the study. Survey results showed high satisfaction levels and a shift towards remote use and increased importance of electronic resources. Further **Guest (1987)**noted that 85% of the respondents relied on their personal collection as a major source of information for teaching and research. The author also found that libraries were rated lowest as a source for getting information. Whereas, ISB of faculty members from Government Arts Colleges in Cuddalore District was studied by **(Suriya, Sangeetha &Nambi, 2004)** to evaluate information-seeking pattern of faculty members in the library and found most of the respondents visited the library several times a week to meet their information needs. Besides this, **Heinstrom (2006)** investigated from a physiological perspective by relating information seeking to personality traits i.e., studied ISB in relation to the five-factor personality theory.305 respondents were included. Research design was quantitative and consisted of three questionnaires. The main finding of study was that students ISB could be grouped into three patters- fast surfing, broad scanning and deep diving, which were linked to personality traits and study approaches. On the other hand, the advent of information technology has revolutionized the field of library and information services and has brought considerable changes in the ISB of users **(Adedibu&Adio, 1997).** Thus,the understanding of information needs and ISB of variousprofessional groups is essential as it helps in the planning, implementation and operation of information system in work settings **(Devadason & Lingman, 1997)**.

Models of information seeking behavior:

Different models have been presented by differentstudents in which information seeking behavior of students, scientists, academicians and professionals have been described. When we turn to ISB, the models are rather numerous: few are discussed here:

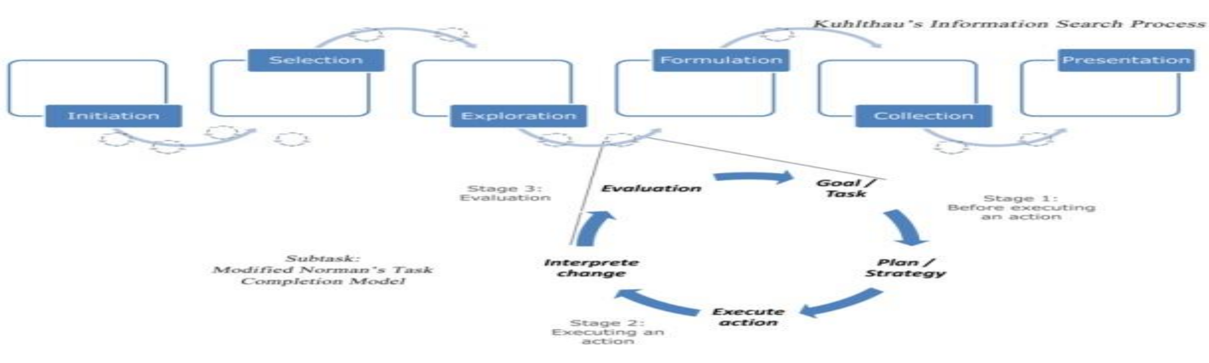
- **Wilson, 1981:** This model may be clearly described as a macro-model or a model of the gross ISB and it suggests how information needs arise and what may prevent, aid or implicate the actual search for information. Drawing upon definitions in psychology Wilson proposes that the basic needs can be defined as physiological, cognitive or affective.



Wilson's Model Of Information Seeking

- **Kuhlthau, 1991**

Kuhlthau model of the information-seeking process was initially developed from empirical research into the ISB of students. The real strength of this model is that in addition to identifying different stages of the information seeking process (namely, initiation, selection, exploration, formulation, collection and presentation). It also presents the feelings, thoughts, activities and tasks associated with each stage



Kuhlthau model of information seeking

- **<u>Dervin, 1983, 1996</u>**

Dervin's sense-making theory has developed over a number of years, and cannot be seen simply as a model of ISB. In it sense-making is implemented in terms of four constituent elements a situation in time and space, which defines the context in which information problems arise; a gap, which identifies the difference between the contextual situation and a bridge, that is, some means of closing the gap between situation and outcome. Dervin presents these elements in terms of a triangle: situation, gap/bridge, and outcome.

The sense-making triangle: situation-gap-use (source: Dervin, 1992)

Dervin's 'sense-making' model re-drawn

- **<u>Big Six Skills Model</u>**

This model was given by Eisenberg and Berkowitz in 1992. They proposed the Big Six Skills which represents a general approach to information problem-solving, consisting of six logical steps or stages. The Big Six Skills involves:

1. **<u>Task Definition</u>**: The students need to define the problem from an information point of view. He needs to define what needs to be done, what information needs to be gathered, etc.
2.**<u>Information Seeking Strategies</u>**: Once the students has clearly defined the information problem, then he must decide which and what information sources are the most appropriate to solve the task.

3.**<u>Location and Access</u>**: It is the implementation of the information seeking strategy. These skills involve use of access tools (bibliographic databases and print indexes), arrangement of materials in libraries, parts of a book; strategies for searching an online catalogue.

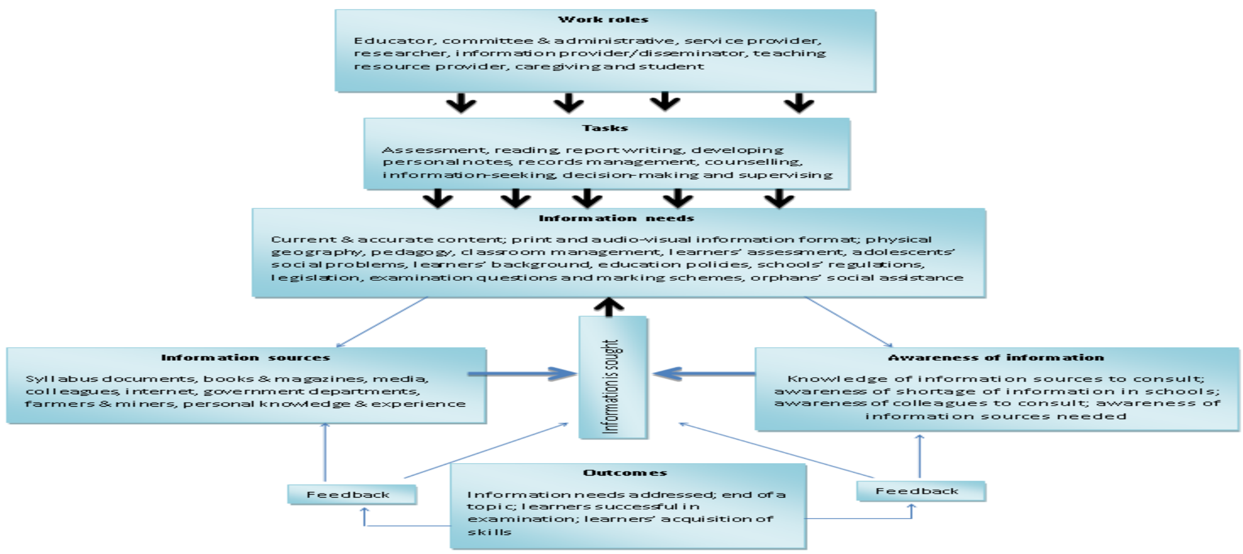
4**.** **<u>Use of Information</u>**: Once students have found the needed information, they can employ skills to use the information. These skills involve interacting, dialoguing, reading, listening, viewing, questioning, and reflecting on the information.

5.**<u>Synthesis</u>**: Synthesis is the application of all information to the defined task. Synthesis involves restructuring and repackaging the information into a new and different form.
6.**<u>Evaluation</u>**: Evaluation is the examination and assessment of the information problem solving

process. It determines the effectiveness and efficiency of the process. Evaluation determines whether the information found met the defined task

- **<u>Leckie, Pettigrew, and Sylvain (1996) model</u>**

This model is restricted to "professionals'' (such as doctors, lawyers, and engineers etc.)carry out many tasks, such as design, development, documentation and implementation. The Leckie model is depicted as flowing from top to bottom.



- **<u>Ellis model of information seeking 1989</u>**

David Ellis was the first to model the process of information-seeking behavior of social scientists which means how they search, interact, and use the material. Ellis's elaboration of the different behaviors constitutes six stages; indeed, he uses the term 'features' rather than 'stages' viz:

<u>Starting:</u> It is the beginning of information seeking i.e. identifying the initial material to search through and selecting starting points for the search e.g., asking knowledgeable colleagues, **<u>Chaining:</u>** Following "chains" of citations or other forms of referential connection between materials or sources identified during "starting" activities. It includes footnotes and citations in known material.

Browsing: Casually looking for information in areas of interest. This activity is made easy by the nature having tables of contents, list of title, topics etc

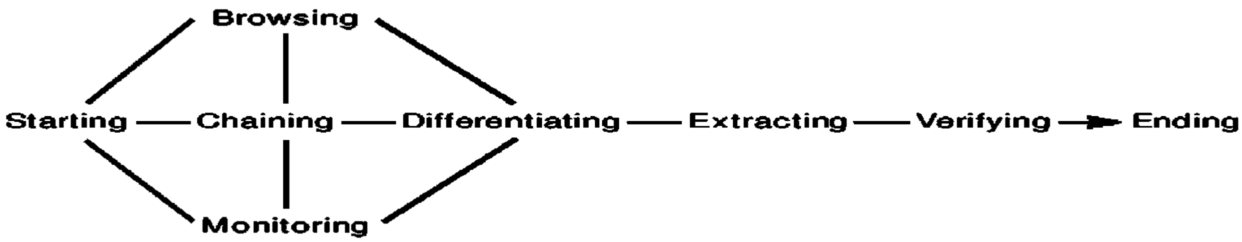
Differentiating: It involves selecting among the known sources by noting the distinctions of characteristics and values of information.

Monitoring: Keeping abreast of developments by regularly following selected sources (e.g., core journals, newspapers, conferences, magazines, books, and catalogues).

Extracting: Activities associated with going to particular sources and selectively identifying relevant material. (e.g., sets of journals, series of monographs, collections of indexes, abstracts or bibliographies, and computer databases).

Verifying: Checking the accuracy of information;

Ending: Which may be defined as 'tying up loose ends' through a final search.



- **Revised model of Ellis:** Meho and Tibbo revised Ellis's information-seeking behavior model of social scientists in 2003. Which, groups all the features into four interrelated stages: searching, accessing, processing, and ending.
- **Comparison of Kuhlthau and Ellis' models:** Ellis presents his model as characteristics or components that can interact in various ways in different information-seeking patterns while as Kuhlthau represents her model in set of stages or phases. She attaches feelings, thoughts, tasks and actions with stages due to this fact Kuhlthau perspective is conceded more phenomenological while as that of Ellis is conceded more cognitive.
- **Comparison of Ellis model with Wilson model:** Wilson classified concept of information need, exchange and use in a flow diagram the model suggests that an information seeking behavior arises as a consequence of need. While as Ellis notes that the detailed interrelation or interaction of the features in any individual information seeking pattern will depend on the unique circumstances of information seeking activities concerned at that particular time.
- **Comparison of Dervins model with Ellis model:** Ellis model is related to the active search mode and collaborative aspects of ISB. While as Dervin's model is completely different in

character, since its aim is to provide a framework for exploring the totality of information behaviour. Whereby raised need is satisfied, whether through active searching or otherwise.

- **Comparison of Ellis model with Big Six model:** David Ellis was the first to model the process of ISB of social scientists which means how they search, interact, and use the material obtained. While as Big six model represents a general approach to information problem solving constituting of six logical stages. It is mainly constructed for students of lower education.
- **Comparison of Ellis model with Leckie,Pettigrew, and Sylvain model**

Leckie et.al. Model is restricted to professionals only, but Ellis model is applicable to scientists, professionals as well as to students etc

- **Shortcomings of the Ellis model**

1) Ellis model appears to sit between the micro-analysis of search behavior (starting, chaining, extracting, verifying, ending) and macro-analysis of information behavior (browsing, monitoring, differentiating).

2) Ellis's model describes the basic process of searching for information.

3) Four additional features where added (accessing, networking, verifying, and information managing) to facilitate the researchers in seeking information on web

4) Ellis model does not include the role of information providers nor does it consider the individuals information need or the contexts in which they arise.

Objectives

- To identify sources of interest serving as starting point of the coursework/teaching.
- Exploring initial sources that are likely to point to or recommend to additional sources.
- Viewing in area of potential interest.
- Select and Prioritize from among the sources selected.
- To identify sources to remain up to date
- Systematically moving through particular sources in order to identify materials of interest.

Methodology

In order to obtain set objectives a questionnaire based on Ellis behavioral model was drafted to collect data for the study. The questionnaire consists of 6 sections- **Starting, Chaining, Browsing, Monitoring, Differentiating, Extracting** containing open ended, closed ended, and scaled form questions to study the root cause and the reasons responsible for information seeking behavior of College users (teachers and students). The questionnaires were distributed among **120** respondents, out of which **93** (**38** faculty members and **55** students) responded making an overall response rate of **77.5%.**Four departments (science, technology, engineering, mathematics) from two engineering colleges (**NIT-** *National Institute of Technology, Srinagar*.**;** **SSM-** *Sir Syed Memorial college of Engineerin**g***) were chosen by simple random sampling**.** Among the ***Science faculty*****34** questionnaires were distributed out of which **25 (**10 (66%) faculty members, 15 (78%) students**)** responded making the response rate of **73.52%.** while as **30** questionnaires were distributed in the ***Technological disciplines (computer science, Electronics and Instrumentation technology)*** recorded the overall response rate of **90%** from **27(**9 (90%) faculty members, 18(90%) students**)** respondents. In the ***Engineering field (Civil engineering, Chemical engineering, Electronics and Communication engineering)*** **36** questionnaires were distributed, out of which **28(**15 (75%) faculty members, 13(81%) students**)** responded and provided **77.77%** as the overall response rate. In the department of **Mathematics 16** questionnaires were distributed out of which **13** respondents (4 (66%) faculty members, 9 (90%) students) responded making an overall response rate of **81%.**

Analysis and interpretation

The collected data is presented and analyzed with the help of 9 figures out of which first 2figures represents the **Starting** feature of the Ellis Model. While as figure 3 represents **Chaining. Differentiating** is represented by figure4**. Browsing** is represented by figure 5. **Monitoring** & **Extracting** is presented by figure6,7 &figure 8, 9 respectively.

1. **Starting (ST1):**Sources of interest serving as starting point of the coursework/teaching

- ***Faculty Members***

A1-As indicated in the fig-1 highest 33.33% of Engineering faculty members make use of the library as the starting point followed by 25% of faculty members from mathematics, 22.22% by the faculty members of technological disciplines & lowest 20% by science faculty members.

A2- As evident from the fig-1 www is highly rated 33.33% by the faculty members of technological disciplines as the starting point of their research/teaching, followed 30% of Science,25% of mathematics, lowest 20% of Engineering faculty members

A3-From the fig-1 it is clear that majority 50% of the science and mathematics faculty members prefer to make use of both (library and www) as the starting point, followed by 44% technology and lowest 40% by the Engineering

A4-It is evident from fig 1 that faculty members from Science, Technology, Engineering and Mathematics does not prefer any other source of information which serves as the starting point of their research/teaching.

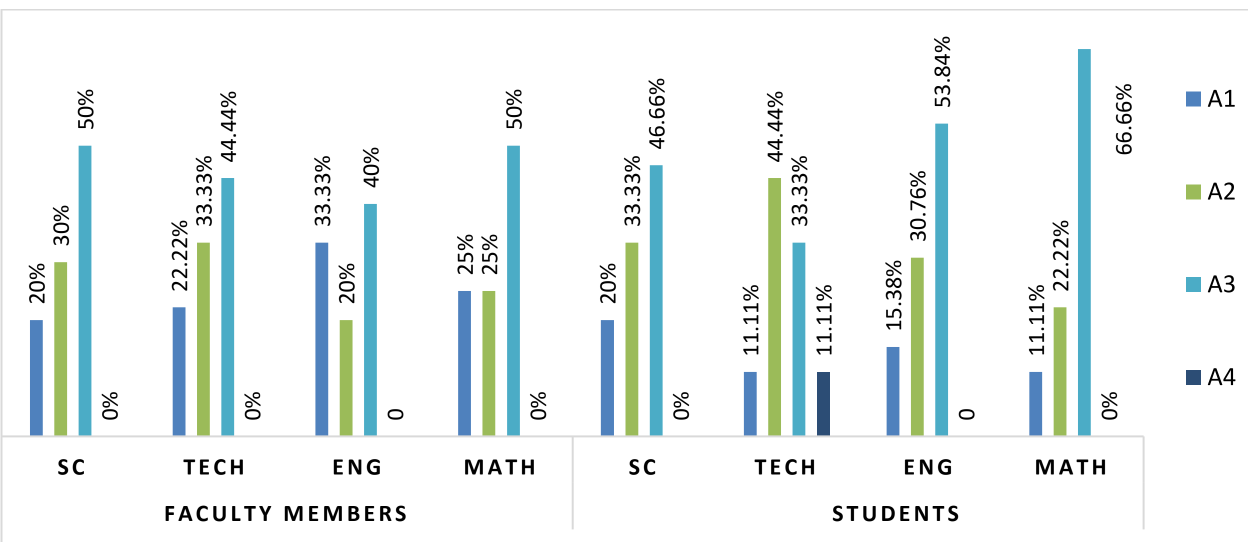
- ***Students***

A1-It is observed from the analysis in table1 that highest 20% of the science studentsprefer to use library as the starting point of their work, followed by 15.38% of Engineering studentsand lowest 11.11% of technology and mathematics students.

A2-Fig-1 shows that www is highest 44.44% used by the technological students, followed by 33.33% & 30.76% of science and engineering students respectively and lowest 22.22% by mathematics

A3-From fig 1 it can be seen that both (library and www)is preferred highest 66.66% by Mathematics students, followed by 53.84% of engineering, 46.66% of science and lowest 33.33% by technology students.

A4-It is evident from table1 that only 11.11% of technology students prefer to use other sources as the starting point while rest of the students belong to science, engineering and mathematics disciplines does not prefer any other source



A1: Library**A2**: World Wide Web **A3**: Both **A4**: Others

Fig 1: *Information sources serves as starting point*

1(a) **<u>Starting (ST2):</u>**Social websites as starting point

- ***<u>Faculty Members</u>***

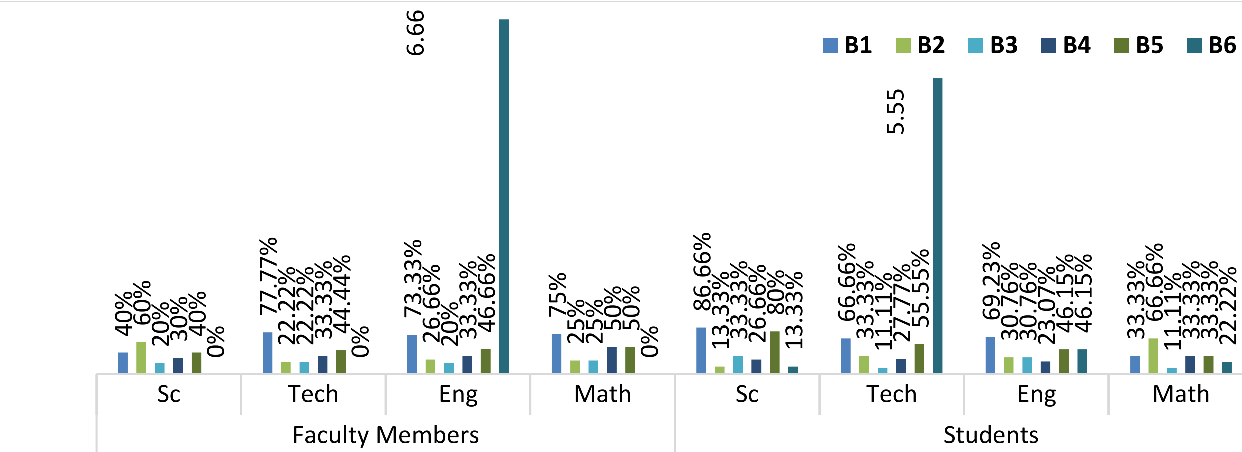
<u>B1 & B2-</u> As evident from fig-2 highest 77.77% of technology faculty members making use of social websites as the starting point followed by 75% of Mathematics, 73.33% of engineering and 40% of science faculty members. Fig-2 also clearly depicts the percentage of the faculty members who do not prefer social websites as the starting point which includes 60% of science faculty members, 26.66% of engineering faculty members, 25% of mathematics faculty membersand 22.22% of technological faculty members.

<u>B3, B4, B5 & B6-</u> The results from the fig-2 reveals that the faculty members from mathematics make highest 25% use of Research ID, followed by 20% of science and engineering, lowest 22.22% by technological faculty members. Fig-2 indicates that highest 50% of mathematics followed by 33.33% of technology, engineering and 30% of science faculty members making use of Research Gate. Fig-2further shows that Google Scholar Citation is highly 50% used by the mathematics faculty members, followed by 46.60% and 44.44% of engineering and technology faculty members, lowest 40% by science faculty members. It is clear from fig-2that only engineering faculty with 6.66% use Face book as starting point.

- ***<u>Students</u>***

<u>B1 & B2-</u>Fig-2 indicates that highest 86.11% of science students prefer social websites as the starting point followed by 69.23% of engineering students, 66.66% of technology students, and lowest 33.33% mathematics. Fig-2also provides the percentage of the students not making use of social websites as starting point of their work which includes highest 68.60% of mathematics students followed by 33.33% of technological students, 30.76% of engineering students and lowest 13.3% of science students.

<u>B3, B4, B5 & B6-</u>From fig-2 it can be observed that Research ID is been highest 33.33% used by the science students followed by 30.76% of engineering students & lowest 11.11% by technology and mathematics students, while as Research Gate is used highest 33.33% by mathematics students followed by 27.77% of technology students, 26.66% of science and 23.33% of engineering students. On the other hand, Google Scholar Citation is preferred highest 80% by science students, followed by 55.55% of technology, 46.19% of engineering and lowest 11.11% mathematics students respectively. Face book is preferred highest 46.19% by engineering students as the starting point, followed by 13.33% science students, 11.11% of mathematics students and lowest 5.55% of technology students.



	Faculty Members Sc	Faculty Members Tech	Faculty Members Eng	Faculty Members Math	Students Sc	Students Tech	Students Eng	Students Math
B1	40%	77.77%	73.33%	75%	86.66%	66.66%	69.23%	33.33%
B2	60%	22.22%	26.66%	25%	13.33%	33.33%	30.76%	66.66%
B3	20%	22.22%	20%	25%	33.33%	11.11%	30.76%	11.11%
B4	30%	33.33%	33.33%	50%	26.66%	27.77%	23.07%	33.33%
B5	40%	44.44%	46.66%	50%	80%	55.55%	46.15%	33.33%
B6	0%	0%	6.66	0%	13.33%	5.55	46.15%	22.22%

B 1: Yes **B2**: No **B3**: Research ID **B4**: Research Gate
B4: Google Scholar Citations **B5**: Face book **B6**: others

***Fig 2*: Prefer to use social websites as starting point.**

2) Chaining (CH): Initial sources that are likely recommend to additional sources.

- ***Faculty Members***

C1(Yes)& C2 (No): As evident from Fig 3 highest 88.88% of technology faculty members are aware about citation databases followed by 80% of science and engineering, lowest 75% of mathematics faculty members. Fig 3 also clearly depicts the percentage of the faculty members who are not aware about citation databases which includes highest 25% of mathematics, followed by 20% of science and engineering, lowest 11.11% of technology faculty members.

C3 (Google Scholar), C4 (Web of Science), C5 (Scopus) & C6 (All)

From Fig-3 it can be observed that Google Scholar and Web of science is been widely 55.55% and 44.44% used by the technology faculty members, followed by 40% & 26.66% of engineering, 30% & 20% of science, lowest 25% & 0% of mathematics faculty members respectively. Scopus is used highest 44.44% of technology, followed by 20%of science, 13.33%

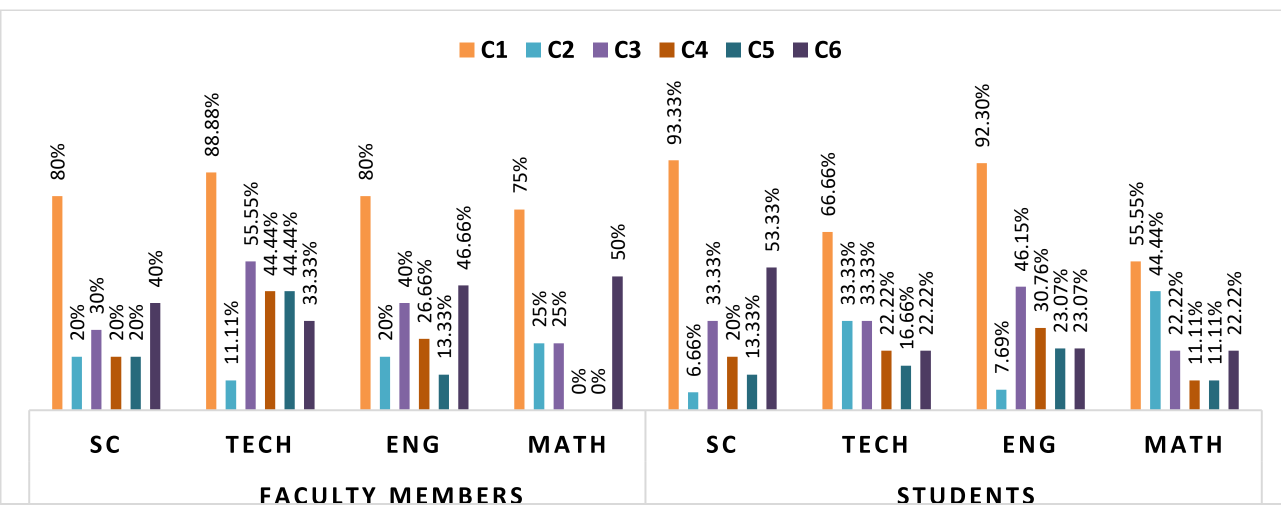
of engineering & lowest 0% of mathematics faculty members. On the other hand, all (Google Scholar, web of science, Scopus) is being preferred highest 50% of mathematics, followed by 46.66% of engineering, 40% of science and lowest 33.33% of technology faculty members.

- ***Students***

C1(Yes)& C2 (No): Fig 3 indicates that highest 93.33% of science students are aware about citation databases followed by 92.30% of engineering students, 66.66% of technology students, lowest 55.55% of mathematics. Fig 3 also provides the percentage of the students who are not aware about citation databases which includes highest 44.44% of mathematics students followed by 33.33% of technological students7.69% of engineering students and lowest 6.66% of science students

C3 (Google Scholar), C4 (Web of Science), C5 (Scopus) & C6 (All)

The results from the Fig 3 reveals that the students from engineering make highest 46.15% of Google scholar, followed by 33.33% of science and technology, lowest 22.22% of mathematics. Fig 3 indicates that 30.76% of engineering, 22.22% of technology, 20 % of science and 11.11 students' members making use of web of science. Fig 3 further shows that Scopus is highly 23.07% used by the engineering students, followed by 16.66 technology, 13.33 of science and lowest 11.11% of mathematics students. It is clear from table6 that All (Google Scholar, web of science, Scopus) is used highly 53.33% of science, followed by 23.07% of engineering, lowest 22.22% of technology and mathematics students.



C1= Yes **C2**= No

Fig 3: *Awareness and Usage of citation Databases.*

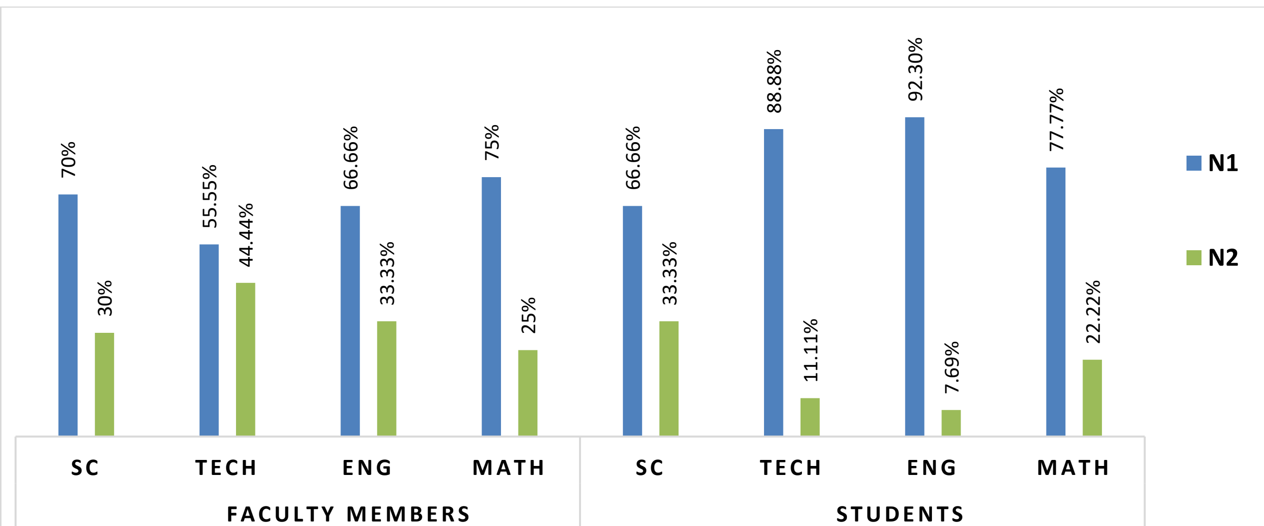
3. **Differentiating (DIF):** Viewing in Area of Potential Interest

- ***Faculty Members***

N1 (Yes), N2 (No): As evident from Fig 4 highest 75% of Mathematics, followed by 40% of science, 66.66% of engineering and lowest 55.55% of technology gives more preference to online resources as compared to print documents. Fig 4 also clearly depicts the percentage of the faculty members who prefer print documents which includes highest 44.44% of technology, 33.33% of engineering, 30% of science, lowest 25% of mathematics faculty members.

- ***Students***

N1 (Yes), N2 (No): Fig 4 shows that highest 92% of engineering, followed by 88.88% of technology, 77.77% of Mathematics, lowest 66.66% of science students gives more preference to online resources as compared to print documents. Fig 4 clearly gives the percentage of the students who prefer print documents which includes highest 33.33% of science, followed by 22.22% of mathematics, 11.11% of technological and lowest 7.69% of engineering students.



N1: YesN2: No

***Fig 4**: Giving preference to sources of information (Print/Online)*

4. **Browsing (B):** Select and Prioritize from among the sources selected.

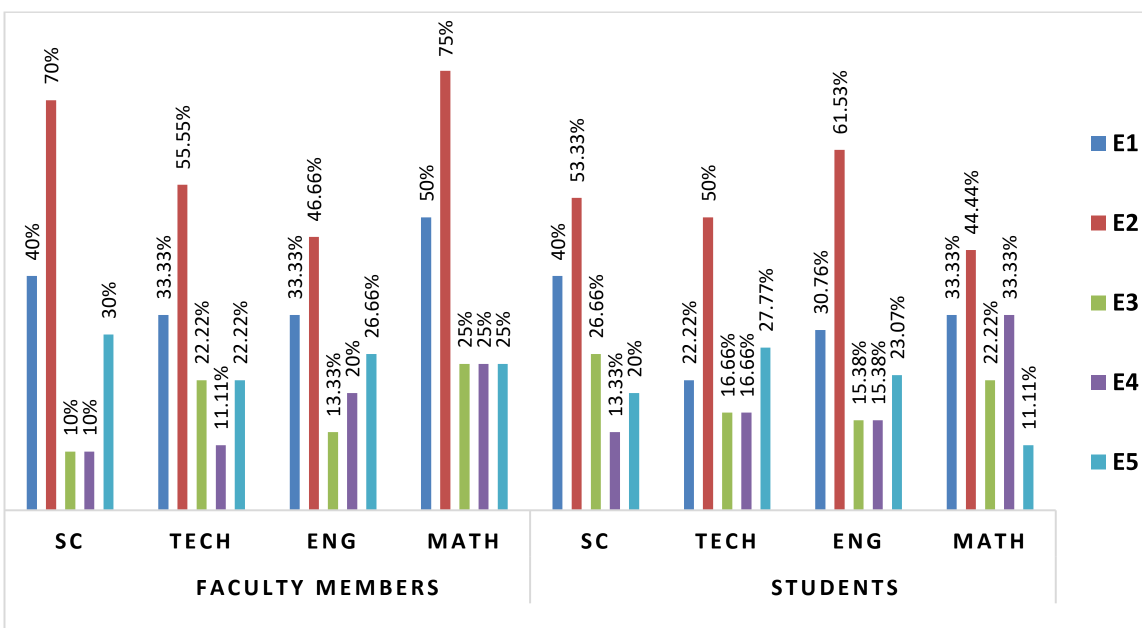
- ***Faculty Members***

E1(Emerald), E2(Science direct), E3(Proquest), E4(EbscoHost), E5(PubMed)-From fig-5 it can be seen that highest 50% of mathematics, followed by 40% of science, lowest 33.33% of technology and engineering faculty members found emerald relevant to their work. Highest 75%

of mathematics, followed by 70% of science, 55.55% of technology, lowest 46.66% of engineering faculty members prefer science direct. While as 25% of mathematics, 22.22% of technology, 13.33% of engineering, 10% of science faculty members use proquest.25% of mathematics, 20% of engineering, 11.11% technology, 10% of science faculty members use EbscoHost. 30% of science, 26.66% of engineering, 25% of mathematics, 22.22% of technology faculty members use PubMed

- **Students**

E1 (Emerald), E2(Science direct), E3(ProQuest), E4(EbscoHost), E5 (PubMed)-From fig-5 it is analyzed that highest 40% of science, followed by 33.33% of mathematics, 30.76%of engineering and lowest 22.22% of technology Students found emerald relevant to their work. 61.53% of engineering, 53.33% of science, 50% of technology, and 44.44% of mathematics students use science direct. while as 26.66% of science, 22.22% of mathematics, 16.66% of technology,15.38% of engineering students use ProQuest. Highest 33.33% of mathematics, followed by 16.66% technology, 15.38% of engineering, lowest 13.38% of science use EbscoHost. Highest 27.77% of technology, followed by 23.07% of engineering, 20% of science, lowest 11.11% of mathematics students prefer PubMed.



E1= Emerald **E2**= Science Direct **E3**= Proquest**E4**= EBSCO host **E5**= PubMed

***Fig 5:** Database(s) relevant to coursework /teaching*

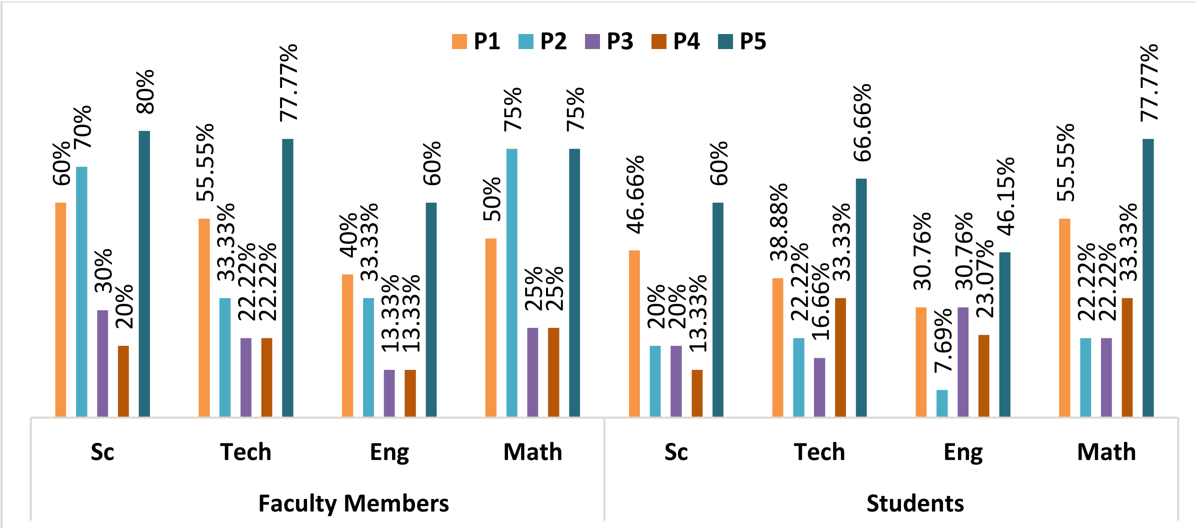
5. **Monitoring (MON):** Information sources to remain up to date

- ***Faculty members***

P1(Scanning current issues of print/ online journals), P2(Conferences), P3(Through Library Services), P4(Personal Communication), P5(World Wide Web): It is evident from fig-6 that to remain abreast of current developments highest 60% of science, followed by 55.55% of technology, 50% of mathematics and lowest 40% of engineering faculty members prefer scanning current issues of print/online journals. Highest 75% of mathematics, followed by 70% of science, lowest 33.33% of technology and engineering use conferences. Highest 30% of science, followed by 25% of mathematics, 22.22% of technology, lowest 13.33% of engineering faculty members remain up-to-date through services from library (CAS and SDI). Highest 25% of mathematics, followed by 22.22% of technology, 20% of science, lowest 13.33% of engineering faculty members uses personal communication. While as highest 80% of science, followed by 77.77% of technology, 75% of mathematics, lowest 60% of engineering faculty members prefer World Wide Web.

- ***Students***

P1(Scanning current issues of print/ online journals), P2(Conferences), P3(Through Library Services), P4(Personal Communication), P5(World Wide Web): Fromfig-6 it is clear that to keep abreast of current developments highest 55.55% of mathematics, followed by 46.66% of science, 38.88% of technology, lowest 50% of engineering students prefer scanning current issues of print/online journals. Highest 22.22% of technology and mathematics followed by 20% of science, lowest 7.69% of engineering students use conferences. Highest 30.76% of engineering, followed by 22.22% of mathematics, 20% of science and lowest 16.66% of technology students remain up-to-date through services from library (CAS and SDI). Highest 33.33% of technology and mathematics, followed by 23.07% of engineering, lowest 13.33% of science students uses personal communication. While as highest 77.77% of mathematics, followed by 66.66% of technology, 60% of science, lowest 46.15% of engineering students uses World Wide Web.



<u>Fig 6</u>: *Sources consulted to remain current in the field*

6(a). Monitoring (MON): Alerting Service (s) to remain up-to-date

- ***<u>Faculty Members</u>***

<u>Q1(Yes), Q2(No):</u> As evident from fig-7 highest 80% of science, followed by 77.77% of technology, 75% of mathematics, lowest 66.66% of engineering faculty members use alerting services. Fig-5 further shows the percentage of the faculty members who does not make use of any alerting services which includes highest 26.66% of engineering, followed by 25% of mathematics, 22.22% of technology and lowest 20% of science faculty members

<u>Q3(Email alerts), Q4 (Table of Content alerts), Q5 (Saved search alerts):</u> From fig-7 it can be seen that highest 75% of mathematics, followed by 60% of science and engineering, lowest 55.55% of technology faculty members use email alerts. 33.33% of technology and engineering.30% of science, 25% of mathematics faculty make use of table of content alerts. While as 33.33% of technology, 25% of mathematics, 20% of science and engineering uses saved search alerts

- ***<u>Students</u>***

<u>Q1(Yes), Q2(No):</u>Fig-7 provides highest 60% of science, followed by 55.55% of mathematics, 53.84% of engineering, lowest 50% of technology students use alerting services. Table11 also shows the percentage of the students who does not make use of any alerting services which includes highest 50% of technology, followed by 46.15% of engineering, 44.44% of mathematics and lowest 40% of science students.

Q3(Email alerts), Q4 (Table of Content alerts), Q5 (Saved search alerts): From Fig-7 it is clear that highest 50% of technology, followed by 46.66% of science, 38.46% of engineering. Lowest 33.33% of mathematics students use email alerts. 30.76% engineering, 16.66% of technology, 13.33% of science, 11.11% of mathematics students make use of table of content alerts. While as highest 33.33% of technology, followed by 26.66% of science, 22.22% of mathematics, lowest 15.38% engineering uses saved search alerts

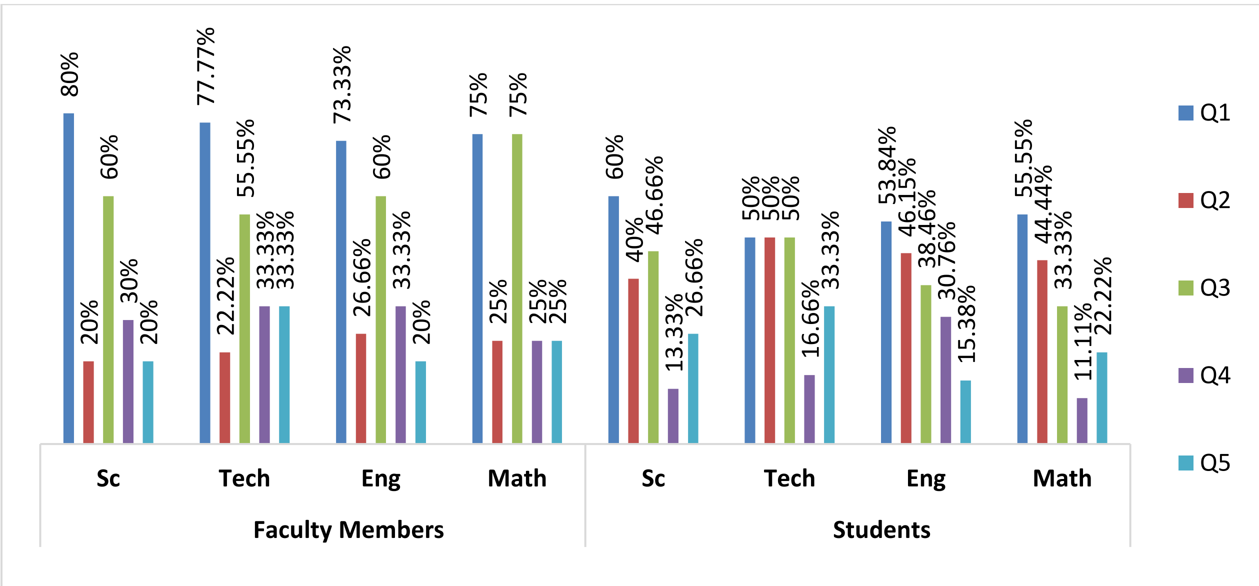


__Fig 7:__ Awareness and use of alerting Service to remain up-to-date.

7 **Extracting (Ext):** Identify materials of interest.

- ***__Faculty Members__***

T1(Simple search), T2 (Boolean Operator), T3(Truncation), T4 (Phrases),T5(Field search), T6(Range search): From fig-8 it can be observed that highest 75% of mathematics, followed by 60% of science, 55.55% of technology and lowest 46.66% of engineering faculty members use simple search technique.33.33% of technology, 25% of mathematics, 20% of science and engineering faculty make use of Boolean operators. 25% of mathematics, 22.22% of technology, 20% of science, 13.33 of engineering faculty uses truncation technique. Highest 50% of mathematics, followed by 33.33% of engineering, 11.11% of technology, lowest 10% of science faculty members use phrases. 50% of science, 44.44% of technology, 25% of mathematics, 13.33% of engineering faculty members uses field search. Highest 75% of mathematics, followed by 44.44% of technology, 30% of science, lowest 26.66% engineering faculty members prefer range search.

- ***Students***

T1(Simple search),T2 (Boolean Operator), T3(Truncation), T4 (Phrases),T5(Field search), T6(Range search: Fig-8 shows search techniques used by students which includes highest 77.77% of technology, followed by 53.33% of science, 46.15% of engineering, and lowest 44.44% of mathematics students use simple search technique. While as 33.33% of mathematics, 30.76% engineering, 13.33% of science, 11.11% of technology students use of Boolean operators. Highest 30.76% of engineering, followed by 22.22% of mathematics, 13.33% of science, lowest 5.55% of technology students uses truncation technique. However 44.44% of mathematics, 23.07% of engineering, 20% of science, 16.66% of technology students uses phrases. Highest 44.44% of technology, followed by 26.66% of science, 11.11% of mathematics, and lowest 7.69% of engineering students uses field search. Whereas highest 33.33% of science, followed by 23.07% of engineering, and lowest 22.22% technology and mathematics students prefer range search.

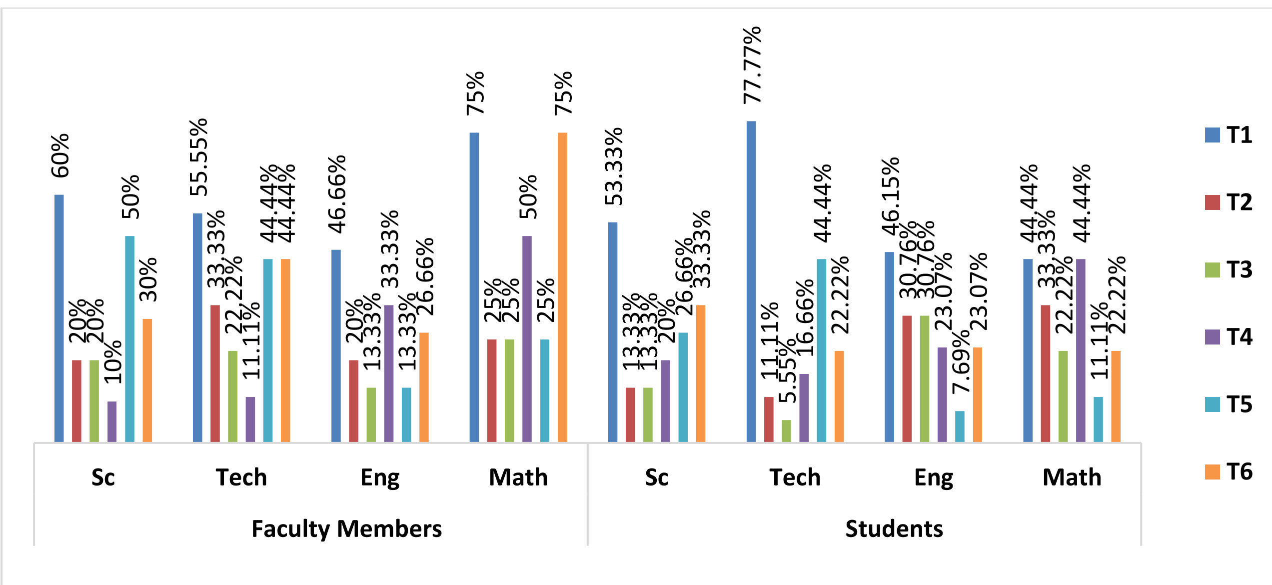


***Fig 8:** Most used search techniques*

7(a).Extracting (Ext): Use of search option

- ***Faculty Members***

U1(Keyword), U2(Language), U3(Date of publication), U4(Author heading),U5(Journal title): Fig-9 shows the percentage of option by which faculty members limit the search results reveal that highest 80% of science, followed by 66.66% of technology, 50% of mathematics, and lowest 26.66% of engineering faculty members use keyword. 33.33% of technology, 25% of mathematics, 20% of science, 6.66% of engineering faculty members prefers language. While as 30% of science, 22.22% of technology, 20% of engineering faculty members uses date of publication. on the other hand 33.33% of technology and engineering, 30% of science faculty members make use of author headings. Highest 88.88% of technology, followed by 75% of mathematics, 60% of engineering and lowest 40% science faculty members use journal title.

- ***Students***

U1(Keyword), U2(Language), U3(Date of publication), U4(Author heading),U5(Journal title): It is clear from fig-9 that highest 66.66% of mathematics, followed by 61.11% of technology, 46.15% of engineering, lowest 33.33% of science students limit their search by making use of keyword. Highest 30.76% of engineering, followed by 22.22% of mathematics, 11.11% of technology, lowest 6.66% of science, students prefer language. Highest 26.66% of science, followed by 16.66% of technology, 15.38% of engineering, lowest 11.11% of mathematics students uses date of publication. Highest 15.38% of engineering, followed by 11.11% of mathematics, 6.66% of science, lowest 5.55% of technology students make use of author headings. While as highest 46.66% of science, followed by 38.88% of technology, 33.33% of mathematics, lowest 30.76% of engineering students use journal title

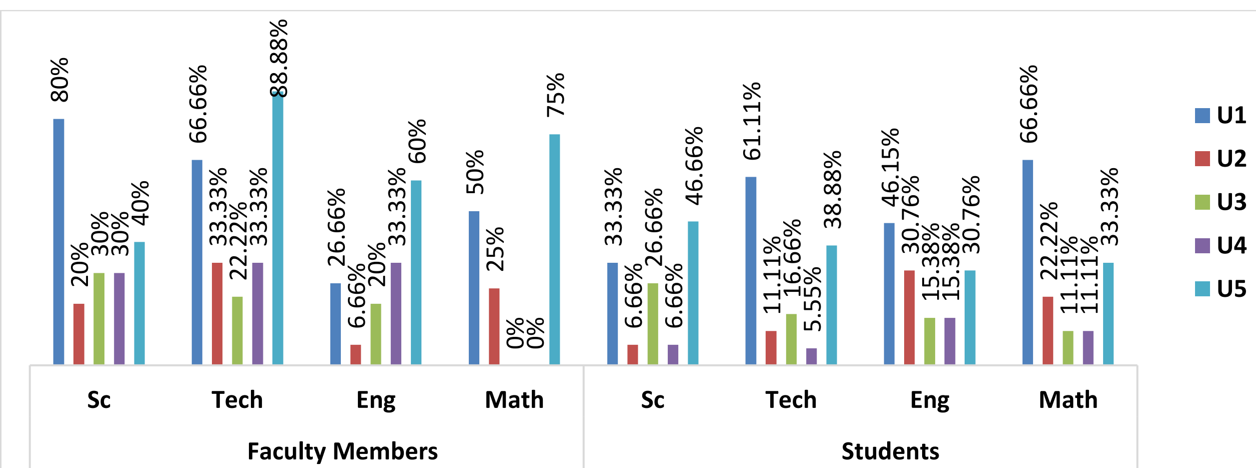


***Fig 9**: Limit the search option*

Conclusion

From this study it can be concluded that the Internet provides, most consulted sources among the plethora of sources listed in this study. Indicating that E-Resources have become the vital part of information dissemination. It is clear from the user's perspective that they accepted the digital reading culture and use of E-Resources. But there is still limitation in terms of access to leading online resources. Therefore, a well-articulated and sustained effort is required to provide ICT facilities in the colleges (that has been surveyed) and make the same (ICT facilities) more accessible to the faculty members/students. As, in the present ICT era, E-Resources constitute an important source of information for library. Thus, more attention should be paid to exploit resources more efficiently.

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