An Appraisal of Search Strategy and Approaches Employed by the Indian Academics for the Use of Online Database: A Critical Study of Universities in Kota, Rajasthan

Hamza Ukashatu Musa (CLN)[1] and Dr. Deepak K. Shrivastava[2]

[1]PhD Research Scholar,
Career Point University Kota, Rajathan, India
E-mail: hamzaukashat@gmail.com
[2]Government Divisional Public Librarian Kota, Rajathan, India
E-mail: deepakshri1974@yahoo.co.in

Abstract

This study is set out to investigate search strategy and approaches used by the academics in the use of online database in Indian especially in Kota. To achieved this objectives four research questions were raise and answered. The survey method was employed in the conduct of this study. The target population of the study comprised of senior Academics who are working in Indian Universities especially in Kota, Rajasthan. The total number of 480 and 5% were randomly selected as sample with the total of 24 academics. The instrument used for data collection was questionnaire; the data collected for the study were presented and analyzed using descriptive statistics, Frequency distribution tables, percentages and histograms were used for the descriptive statistics. The study discovered that majority of Academics were not using almost the online available due to lack of access of such resources by the university libraries, simple search strategy, limiter search and were the major search strategy applied by the academics and Therefore, the study recommended that academics needed to provided online database access to the academics and organised more training on different search strategy and approaches on use of the online databases in order to improve their teaching and research activities

INTRODUCTION

Today we are in the age of IT and almost all courses are affected by the influence of IT but if we talk about the library and information Science, we found that almost services are being replaced by Information Technology, but still in India we are facing the problem of digital Divide. And very surprising that Users who knows the Computer or specially Good academics from Good Institution from India and abroad, still unknown by Pin Pointed Search Strategies for using Online resources and almost knows about one and only one gateway that is "Google". As a Researcher and Academician of Library and Information Science, I Personally feel that many of things are unauthorized, illegal and unauthentic information are served to the users. It's a dangerous to knowledge seekers and Academics also. Many more reasons are responsible for this type of Happenings but it's a fact that Now we are facing the Problem of Exponential Growth of literature.

As I have discussed earlier, the Speedy growth of information spaces on the Internet on the entire arena of knowledge and subject is a great privilege to information users on different subject especially in academic environment. Also the consumption of information resources at all levels of human activities has led to paradigm shift or shifting the industrial society into information society because we lived in the Information economy age. Thought the academics need to admit the value of information because Information is a Power especially online information resource and services to support their academic activities i.e. teaching, learning and research as well as community development.

Information is seen as a basic ingredient for personal educational and Socio-economical national and International development. It's a vital to the overall academic development of university's teaching staff. Thus, it has to be stored in a manner to access instantly, easily and transmitted in both way either in a print and electronic devices for easy search, access and use by its customers.

The ICTs help information users to searches, access and use information regardless of time, distance, location, size and language. With these developments of IT nowadays, there is so much increase of information resources in different format and also the skill on how to search; access and use information has become a granted issue in the academic environment. The technology had a great impact on work of libraries in the delivering its services and providing information and skills needed as well as on how users search, access and utilization of information (Roslina, 2014).

Online Databases Search Strategy (ODSS)

Finding the right information in the online environment and other resources is not happenstance. Creating a search strategy is very important for successful

search result. Applying the knowledge and skills of information resources and search strategies will bring your to a successful research outcomes, even when information is not familiar with the research titles or topic at hand (Garakan, at el 2006).

Searching information online require general knowledge and skills by the general information seekers. This knowledge includes;

a. Knowledge on how to create a search statement using keywords
b. Knowledge on how to use the databases appropriate to your research titles
c. How to use the keywords and controlled the language
d. How to make use of advance search strategy
e. How to make use of different search approaches as if necessary
f. Continue to identify applicable keywords and controlled vocabulary to go back

Therefore, librarians are expected to be professional in search and also teach information users on how to use different search strategies when searching online database. They should have the skills to teach users how to create appropriate search strategies that will save the time of users; reduce confusion, present information in coherent, meaningful and relevant way (Roslina, at el 2014).

PROBLEM STATEMENT

Before residing the Problem Statement "Academics are those who are actively involved in teaching learning and research activities". They are involved in teaching, researching, administrating and community development. Academics in any society are seen as the propellers of knowledge because they provide an effective learning environment. They need information resources especially online databases to support and promote their daily activities. Information is stored, search, shared, accessed and used properly to support education society. Online databases have brought about a shift in the provision of library services and information by providing wide access to resources from different parts of the world with ease. Online information resources have become an integral and substantial component of academic library collections worldwide. The resources are regarded as essential for teaching, learning and research activities as well as self and community development (Kumar et al, 2007; 2011). Supporting teaching, research and learning activities traditionally becomes a major mission of academic libraries. That the university library is needed to provide information searching skills and knowledge to library users in order to enhance online database access and use. However, preliminary my observations and available literature revealed that-"***most of the Academics are lost in the flood of***

information in Internet or do not know how to use search strategy to get the credible information in the course of their academic activities". Their inability to overcome these challenges automatically makes it impossible to explore the potentials of the online databases, despite the advantages of the online databases in teaching, learning and research.

RESEARCH QUESTIONS
The following are the research question for the study seeks to answer
1.　What types of Online Databases are available for the Uses of Academics in Indian Universities especially in Kota Rajasthan?
2.　How do the Academics in Indian Universities especially in Kota Rajasthan search, Access and use the available Online Databases?
3.　What types of approaches and search techniques used by the Academics in Indian Universities especially in Kota?
4.　For what purpose do the Academics in Nigerian as well as Indian Universities especially in Kota adopted search strategy in accessing the online databases?

REVIEW OF RELATED LITERATURE
Literature review is an important component of any research work. Literature pertained to this research study has been derived from different information sources such as textbook, journals (CD-ROMs, online and print) and reference sources etc. with the aim of putting the study in proper prospective. In order to achieve this effectively, the information related to topic on "Search strategy" Rabecca, et al (2010) Defined Search strategies can be defined as an organized plan by which a person conducts a literature search. In computerized database searching, it refers to a set of planned search statements entered into a search system to retrieve desired records. Vakkiari (2003), Discussed the Search strategies are the products of planned or situational interactions between users and IR Systems. In other words, it highlights a working planned interactive reaction for a given situation. Search strategy is the 'action plan' for retrieving information.. Adding to the above definition, Xie (2008), sees that search strategies comprise of a systematic of different approaches that take into account both planned and situational elements. However, one could relate search strategy that is a plan that information seeker employed to achieve his academic research activities. Nachmias & amp; Gilad (2002). Stated that searching information on the Internet isn't just a popular activity but an important for information seeker to acquire information searching skill to access and obtain authentic information. Thus understanding information searching processes is an advantage to researcher. Nachmias and Gilad (2002), Observed that searching

and accessing information on the Internet require knowledge of search techniques and skills to make an effective use search engines, According to Xie and Joo (2010) Explored that "the Internet Search Strategies includes application of Boolean Operators, Phrase searching, Proximity search, Fuzzy Search, Stemming, Truncation searches and Wildcard searches" In the modern information environment, it is important to have an understanding of how to search databases effectively. There are a number of techniques that people can apply to retrieve relevant search results either to narrow a search or to broaden a searches. Mehrad and Rahimi (2009) conducted a study on Online Search Skills of Shiraz University, states IR tools have already been designed and used to make information in the web beneficial to users. Therefore, concentration on using the best search strategies is significantly needed Sapna Verma (2016), found out that about 65 (90.27 %) use phrase searching technique, 87.5 % use simple search, (84.72 %) of users use keyword searching method, (69.44 %) use Boolean searching method and (66.66 %) of users use truncation search

Nguyen Hong Sinh, at el (2012) Conducted a study "Users' Searching Behaviour in Using Online Databases at Vietnam National University-Ho Chi Minh City" discovered that

- Simple search, keyword search was the major search employed the most (77.7%), followed by title search (62.5%) and then by author search (36.9%). There were 20.5% users using advanced search (using search limitations) but 51.9% never used and 22.2% users using expert search (using operators such as NOT, OR) but 51.8% never used.
- Primary purpose for database searching was studying (45.6%). It followed by performing research (29.7%) and keeping updated with progress (20.6%). It ended by teaching (only 4.1%).
- About 91% learned by trial and error (play with functions and options offered by the search engine and then discovery how to search), 89.2% learned by reading guideline materials from database itself, 81.7% learned by reading guideline materials from the Central Library websites, 63% learned from friends, 59.7% learned from training sessions and 57.4% learned by asking library staff
- poor skills in database search, English language and low speed of online transmission were the major challenges in the utilization of online databases

The study recommended that Upgrading infrastructure, increasing the amount of databases and improving the communications between the library and users are the three main users" expectations from the library support.

RESEARCH METHODOLOGY

A survey method was employed in the conduct of this study. The target population of the study comprised of senior Academics who are working in Indian Universities especially in Kota, Rajasthan. The total number of 480 and 5% were randomly selected as sample with the total 24 Cademics. The instrument used for data collection was questionnaire; the data collected for the study were presented and analyzed using descriptive statistics, Frequency distribution tables, percentages and histograms were used for the descriptive statistics

DATA ANALYSIS AND DISCUSSION

This section analyzed and discussed data collected for the study. This is therefore done through descriptive analysis and secondly through inferential analysis.

Types of Available Online database being Aware of by the Academics in India especially in Kota Universities, Rajasthan

The research was aimed at identifying the various types of available online database which the Academics in India especially in Kota Universities, Rajasthan are aware of. In order to achieve this, a list of online database was outlined for the respondents to tick as many possible in their respective Universities. Below is Table showing the types of online database available.

Table: Types of the available online database being of aware of by the Academics of Academics in India especially in Kota Universities, Rajasthan

Online Database	RTU	UOK	VMOU	AU	CPU	Total
AGOR	5	0	3	2	2	50%
Hinari	2	2	1	0	0	20%
Jstor	4	2	2	0	1	41.60%
OARE	1	0	3	2	0	25.50%
Science direct	5	2	3	2	4	66.60%
ARDI	1	0	0	0	0	4.16
EBSCO HOST	5	1	0	2	0	29.10%
Journals of PA	1	0	3	2	0	41.40%
DOAJ	0	0	0	1	2	16.6
DOAB	0	0	0	0	0	0
PubMed	0	0	0	0	0	0
BioMed Central	0	0	0	0	0	0
OAJSE Link	0	0	0	0	0	0
INDMED	1	0	0	1	3	20.80%
OALib Link	0	0	0	0	0	0

IRL Link	5	0	2	2	0	37.50%
Highwire	0	0	0	0	0	0
LibGen Link	2	0	0	2	1	20.8
EALL Online	0	0	0	0	0	0
Arabica online	0	0	0	0	0	0
Ajurry online	0	0	0	0	0	0
INFLIBENT/NLISt	0	2	0	1	0	12.80%

Table above, it was discovered that AGORA, JSTOR, Science direct, Journals of Performing Art and Indian Research Library Link were the types of online databases known by Academics with highest frequency of over 60% responses scores by the academics in Indian Universities especially in Kota Rajastharn, Whereas Directory of Open Access Journals (DOAJ) INFLBENT/NLIST and ARDI were the types of online databases aware with least frequency of less than 16.6% responses scores respectively. However, a further observation from the table indicated that Directory of Open Access Book, OAJSE Link, PUBMED, Highwire, EA Language and Linguistics, Ajurry online were completely not known by the Academics in India especial Kota. However, this finding shows that Agora and Science direct were the types of online databases mostly known by Academics in Universities in Kota

Type Online Databases Search and used by the Academics of Indian Universities especially in Kota Rajasthan State

Resource	RTU	UOK	VMOU	AU	CPU	Total
AGOR	5	0	3	2	2	50%
Hinari	2	2	1	0	0	20.80%
Jstor	3	2	2	1	1	37.50%
OARE	0	0	3	2	0	20.80%
Sciencedirect	5	2	2	2	4	62.50%
ARDI	0	0	0	0	0	0.00%
EBSCOHOST	3	0	0	2	0	20.80%
Journal PA	4	0	3	1	0	37.50%
DOAJ	1	0	0	1	0	8.33%
DOAB	0	0	0	0	0	0.00%
PubMed	0	0	0	0	0	0.00%
BioMed	0	0	0	0	0	0.00%
OAJSE Link	0	0	0	0	0	0.00%
INDMED	1	0	0	1	3	20.80%

OALib Link	0	0	0	0	0	0.00%
IRL Link	5	0	2	2	0	37.50%
Highwire	0	0	0	0	0	0.00%
LibGen Link	2	0	0	2	1	20.80%
EALL Online	0	0	0	0	0	0.00%
Arabica online	0	0	0	0	0	0.00%
Ajurry online	0	0	0	0	0	0.00%
INFLIBENT	0	2	0	1	0	12.50%

The table above was discovered that AGORA, JSTOR, Science direct, Journals of Performing Art and Indian Research Library Link were the types of online databases search and used by Academics with highest frequency of over 37%, 50% and 60% responses scores by the academics in Indian Universities especially in Kota Rajasthan, whereas Directory of Open Access Journals (DOAJ) and INFLBENT/NLIST were the types of online databases search and used with least frequency of less than 12.50% responses scores respectively. However, a further observation from the table indicated that Directory of Open Access Book, OAJSE Link, PUBMED, Highwire, EA Language and Linguistics, Ajurry online were completely not search and used by the Academics in India especial Kota. This perhaps might be connected to the fact that or the Indian Universities in Kota might not provide direct access to such resources to the academics which result to lack of awareness of their availability of the resources or lack information searching skills by the respondent.

Is one of the objectives of this study to investigate the means and how Academics search and used the online databases in Indian Universities especially in Kota Rajasthan State. A list of options was provided for the respondents to indicate as many relevant options as possible as shown in the table

How Academics Search and Used of Online database in Indian Universities especially in Kota Rajasthan

How do you used the service	RTU	UOK	VMOU	AU	CPU	Total
By direct reading from Net	5	2	3	1	6	70.80%
By downloading the information resources	5	2	3	1	5	25%
By mere cut and paste	5	0	0	2	5	45.80%
By saving the document in any storage devices	5	2	3	2	5	58.30%

By printing the content of the document	3	0	3	2	5	50%
downloading the forwarded document from email	3	0	2	2	4	45.80%

Table above revealed that Academics in Indian Universities with special reference to Kota Universities Rajasthan search and use online databases through direct reading from the net, printing the content of the document and saving the document in any storage media with the highest frequency of over 58% and 70% responses scores respectively. On the other hand, By downloading the information resources were found to be the least means of ways of searching and use of online databases with least frequency of less than 25% responses scores. However, from the result, it shows that majority of the respondents prepare reading from the net and downloading the information resource then printing the content of the document

Is one of the objectives of this research is to identify the major approaching and search techniques used by the Academics in Universities especially in Kota, in order to obtain the answers, the respondents were asked to indicate their approaching and search techniques used in their respective institutions as outline in the table below;

Table: Approaches and Search techniques employed by the Academics in the used of online databases

| Search Strategy used	RTU	UOK	VMOU	AU	CPU	Total
Keyword searching	3	2	3	2	7	70.83%
Limiters	5	0	1	2	2	41.60%
Boolean operators	5	0	2	2	2	45.60%
SQL	4	0	0	2	0	25%
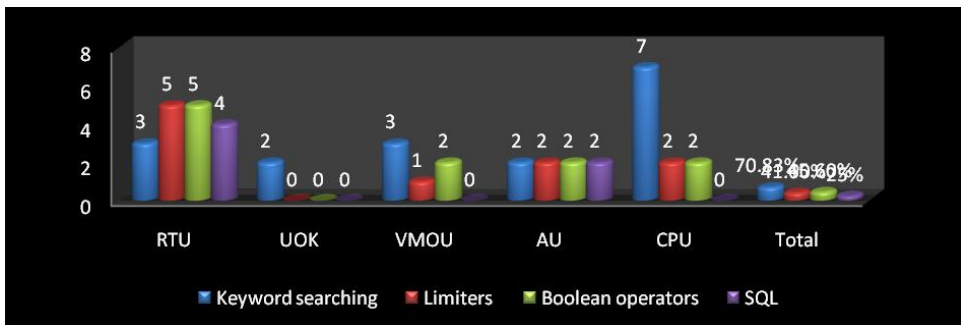
Approaches and Search techniques employed by the Academics in the used of online databases

The table above revealed the response on the respondent on the major search techniques applied while searching and using the online databases by the academics of Indian Academics with reference to Kota Universities. it was discovered that Keyword search, were the major search techniques used by the academics of Indian Universities with highest frequency of over 70% response score, whereas Boolean operators and Limiter search score the least frequency of less than 45% and 40% respond scores respectively. However, the researcher found out that SQL were not given much attention by the Indian Academics.

Table: How Academics applied Search techniques while Searching and Using the available online databases

| Search strategy applied	RTU	UOK	VMOU	AU	CPU	Total
Search by author	5	2	2	1	7	66.60%
Search through the title	5	2	3	1	5	66.60%
Search through subject	5	2	1	2	4	58.30%
Through publication name	5	2	1	2	4	58.30%
Keyword search	5	1	3	2	2	54.10%
Search by ISBN	5	0	1	2	1	37.50%
Search by ISSN	5	0	1	2	1	33.30%
Search by ISMN	4	0	0	1	0	20.80%
Search by EAN	0	0	0	0	0	0.00%
Field specific searches	0	0	0	2	0	8.10%
Use of thesaurus	2	0	0	1	1	16.60%
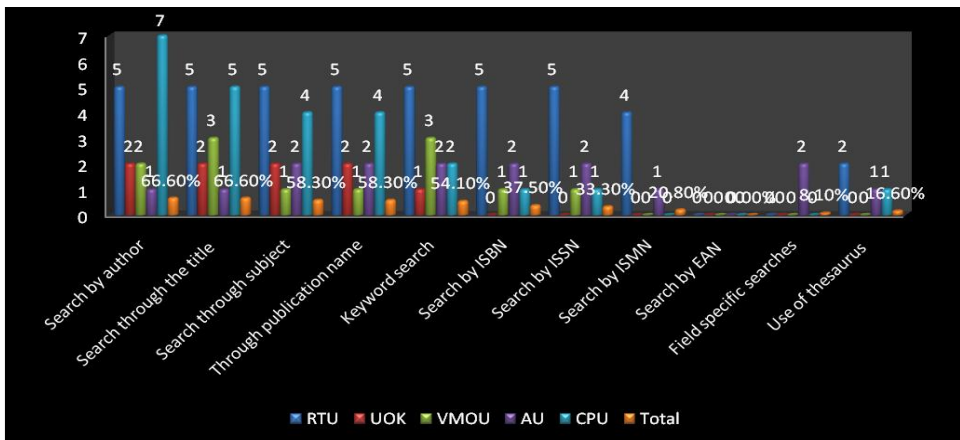
How Academics applied Search techniques while searching and using the available online databases

The table above revealed the response of the respondent on how academics applied different search strategy while searching and using the online database. It was indicated that Author search, title search, Search through subject, searching Through publication name and Keyword searching were the major search strategies applied while searching and Using the online databases by the academics with highest percentage of over 66.6% and 54.10% response score by the respondent in Indian whereas, Search though ISSN, Search through ISMN, Field specific searches and Use of thesaurus score the least percentage of less than 20% respectively. However, the researcher further revealed that Search by EAN were completely not applied while searching and using the online database by the academics of Indian Universities especially in Kota Rajasthan.

Table: Extent of Limiter search strategy applied by the Academics while searching and using the online database

Limiter Search	Frequency
YES	62.50%
NO	0%
UNDECIDED	16.60%
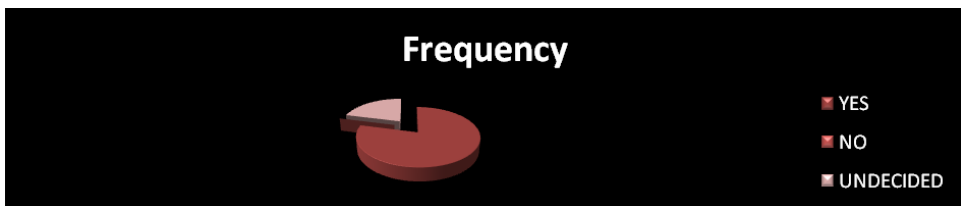
The table above revealed the response of the respondent on whether they applied limiter search strategy while searching and using the online database by the academics Indian universities especially in Kota. It was discovered that about 62.50% of the respondent in Indian Universities applied limiter search strategy while searching and using the online database available in their respective institutions. It was only few indicated undecided with least frequency of less than 16.65% respectively.

As follow up to the above research question raised in to outline the frequency on whether the academics applied the Limiter strategy while searching and using the online database in Indian Universities especially in Kota and the respondents were asked to indicate as many options as applied on the table below table

Limiter Search strategy	RTU	UOK	VMOU	AU	CPU	Total
Limit though year of Publication	1	0	3	1	5	41.66%
Limit by Field	3	2	1	1	4	45.83%
Through Full Text	5	2	1	1	4	54.16%
Language of publication	4	0	0	2	3	37.50%
University subscription	0	2	1	0	0	12.50%
Through self subscription	0	0	1	0	1	8.40%
Through open access	4	2	1	2	2	54.16%
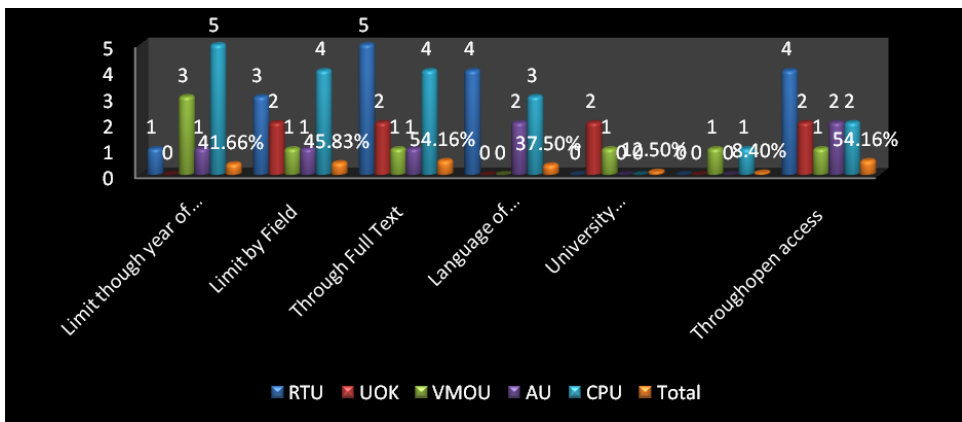
Through open access, Through Full Text, Limit by Field and Limit though year of Publication 54% and 41% response score whereas University subscription and Through self subscription indicated the least percentage of less than 12% respectively. However, this finding shows that about half of academics in Indian Universities especially in Kota applied limiter especially limit searching through open access and full text.

Table: common phrases that mostly applied in Boolean operators search techniques by the Academics while searching and using the online databases

Common phrase	RTU	UOK	VMOU	AU	CPU	Total
Use of AND	4	2	2	2	6	66.60%
Use of OR	2	2	0	1	4	37.50%
Use of NOT	3	0	0	1	5	37.50%
Use of NEAR	2	0	0	1	4	29.16%
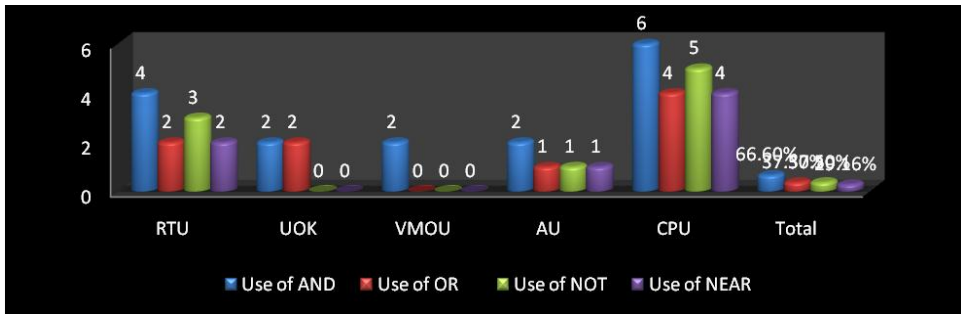
The table above revealed that Use of AND were the major common search phrase applied while searching and using the online databases with highest percentage of over 66.60% responses score by Indian Academics of Kota Universities whereas Use of OR and NOT scores the least percentage of less than 37% respectively. However, this finding shows that majority of Indian Academics especially in Kota Rajasthan applied or use of and while searching and using the online databases. However,

Table: Purposes of searching and Using of Online database by the Academics of Nigerian Federal Universities North Western State as well as Indian Academics with special reference to Kota Universities

Purpose for using OD	RTU	UOK	VMOU	AU	CPU	Total
Research activities	5	2	3	2	5	66.60%
Paper writing for publication	5	2	2	2	3	58.33%
Information Literacy	5	1	2	2	3	54.16%
Teaching	5	2	3	2	4	54.16%
Seminar/workshop presentation	5	2	2	1	2	54.16%
Preparing Lecture note	5	1	2	2	6	66.60%
Self and Community development	5	1	2	2	4	58.33%
Consultancy services	5	1	2	2	2	50%
Thesis/ Dissertation writing	5	1	1	2	5	54.16%
For Routine study	5	1	2	2	5	62.50%
To keep yourself up-to-date on the	5	1	3	2	5	66.60%
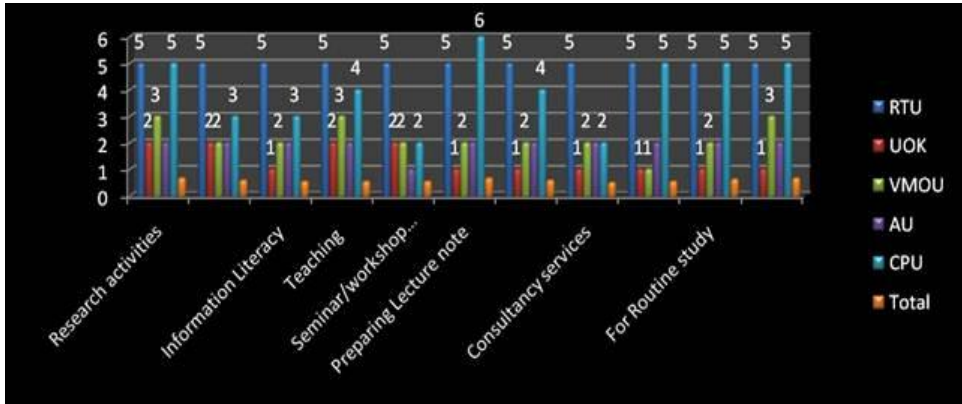
Purposes of searching and Using of Online database by the Academics of Nigerian Federal Universities North Western State as well as Indian Academics with special reference to Kota Universities

Table revealed the response of the respondents on the reasons/purpose for searching and using online databases that research activities a, To keep yourself up-to-date on the current issue, For Routine study, thesis writing, lecture note, teaching, preparing writing for publication were the major reasons for searching and using the of online databases with highest frequency over 60% and 50% responses score by the Academics of Indian especially in Kota

SUMMARY OF MAJOR FINDINGS

Based on the data collected and analyzed for this study, the following are the major findings:

1. Out of twenty two online databases listed to the Academics Nigerian Federal Universities North Western State as well as Indian Academics especially in Kota Universities Rajasthan State, the study discovered that:

    a. that AGORA, JSTOR, Science direct, Journals of Performing Art and Indian Research Library Link, Directory of Open Access Journals (DOAJ) INFLBENT/NLIST and ARDI were the types of available online databases known and use by Academics of over 37%

    b. that Directory of Open Access Book, OAJSE Link, PUBMED, Highwire, EA Language and Linguistics, Ajurry online were completely not search and used by the Academics in India especial Kota

2. On how and where Academics search and use online databases available, the study revealed that:

   a.   Over 50% of Academics searching information through search Engines, Direct Link through Database and connected direct through publishers website and also searching online databases through direct reading from the net, printing the content of the document and saving the document in any storage media
   b.   That Internet (Cable and Wires) and WIFi were the means of searching and using the online databases

3.   On Approaches and Search techniques employed by the Academics while searching and using the online databases the study discovered that:
   a.   About 70% of the Academics applied Keyword search strategy while searching the online database available also Academics applied Boolean operators and Limiter search techniques while searching and using the online databases whereas SQL were not given much attention by the Indian Academics.
   b.   Over 50% of Academics applied Author search, title search, Search through subject, searching Through publication name and Keyword searching strategies while searching and Using the online databases
   c.   that about 62.50% of the respondent in Indian Universities applied limiter search strategy while searching and using the online database available in their respective institutions and also they limited their searching Through open access only, Through Full Text, Limit by Field and Limit though year of Publication
   d.   that majority of academics applied "Use of AND" as the common search phrase while searching and using the online databases

4.   That over 50% of the Academics in Indian Universities especially in Kota search and use online databases for the purpose of keeping self up-to-date on the current issue, For Routine study, thesis writing, lecture note, teaching, preparing writing for publication
5.   Out of twenty two online databases listed to the Academics that, the study discovered that 80% and 100% of the respondents found were not satisfied with the resources due to lack of information literacy skill and other problems associated with accessing the resources

CONCLUSION
Based on the findings of the study, it could be concluded that majority of Academics were not using almost the online available online databases due to lack of access of such resources by the university libraries, simple search strategy, limiter search and were the major search strategy applied by the academics and

mostly learned by tray and error, at the same time the study discovered concluded that lack of information literacy skills and problems associate with the resources is one of the major challenges face by the academics while searching and using the online databases in their respective institution. Therefore, the study recommended that academics need training on different search strategy and approaches on use of the available online databases in the University libraries' website in order to improve their teaching and research activities. However, there is no doubt that if all Academics would be trained on how to apply different search strategy in the use the online databases available, there will be high of online information access and usage, higher quality teaching and research activities, and above all high level satisfaction with online resources available.

REFERENCES

1. Nachmias, R. & Gilad, A. (2002). Needle in a hyperstack: Searching for information on the World Wide Web. *Journal of Research on Technology in Education, 34*, 475-486.

2. Mehrad, J. and F. Rahimi, (2009) Online Search Skills of Shiraz University Post Graduate Students: A Survey. International Journal of Information Science and Management, 7(1). Roslina Othman and Nur Leyni Nilam P. J (2014), Search Strategies Formulation among Library and Information Science Students in Online Database. *Middle-East Journal of Scientific Research, 19* (3), 338-345, 2014.

3. Sapna Verma (2016), Use of Online Databases in Central Science Library, University of Delhi: A Survey., DESIDOC Journal of Library & Information Technology, 36(2), 104-107 DOI: 10.14429/djlit.36.2.9409

4. Vakkari, P., Pennanen, M., and Serola, S.(2003). Change of search terms and tactics while writing a research proposal: A longitudinal case study. Information process management. 39, 445-463.

5. Wong, Sharon S-L, Nancy L. Wilczynski, and R. Brian Haynes. (2006) "Developing Optimal Search Strategies for Detecting Clinically Sound Treatment Studies in EMBASE." Journal of the Medical Library Association,   41-48. http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1324770.

6. Zhang, L., Ye, P., Liu, Q., & Rao, L. (2011). Survey on the utilization of NSTL electronic resources in colleges and universities in Wuhan, China. *The Electronic Library, 29*(6), 828–840.