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E-resources Utilisation Pattern among the Faculty of Kempegowda Institute of Medical Sciences, Bangalore: A Study

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Abstract: *This paper examines the utilisation pattern of e-resources by faculty of the Kempegowda Institute of Medical Sciences (KIMS) Bangalore. The purpose of the study is to understand the utilisation pattern of E-resources and frequency of access to the internet by the faculty members of KIMS. The faculty members of health science universities and/or medical colleges are engaged in teaching, research, and their information needs and expectations are diverse and varied. Realising the importance and usefulness of the E-resources, most of the colleges in India and elsewhere generously invested in procuring and create access to e-resources to support information needs, teaching, learning, and research studies. The paper highlights the usage of different types of e-resources in health sciences, and also the application of web browsers and search engines in this context by the faculty members of KIMS. The levels of satisfaction among faculty members of KIMS towards the E-resources and barriers in using E-resources have been identified in this study.*

Keywords: Usage Pattern, User Awareness, E-Resources, HELINET, KIMS

1. Introduction

The libraries and higher education are the working partners in the process of education, teaching and research since ages. The libraries are contemporarily adopting technological innovations from the early years. This has been happening more intensely in the last two decades, as the developments in Information and Communication Technologies (ICT) have been unprecedented. The impact is also seen in the changes in the information and knowledge resources possessed by the libraries. They have now changed from traditional print resources to E-resources as the latter have become highly sought by the educators and learners in recent years, as the libraries acquire such more e-learning and teaching aids to cater to changing needs of users. The health science information domain was the first adopt the electronic environment for developing information resources, and the first such product was the Silver Platter first to bring a CD-ROM Database of MEDLINE with search facility – SPIRS (Subramanyam et al., 2017).

The ICT has created an immense impact in the area of medical information resources management, data storage, access and retrieval facilities progressively. In medical education, they are of particular interest for the study of subjects like Anatomy as it deals with wide-ranging visual images of the human body. So medical science needs availability of more and more visual information, and digital photographic technology has facilitated to obtain functional three-dimensional (3D) images of the human body and its tissues (Jestrow and Hollinderbaumer, 2004). The medical information publications are going digital in large volume in various formats termed as e-Resources. They have resulted in the vast growth of e-resources, and it is the responsibility of librarians to put them for effective use. To fulfil this objective medical teaching faculty should be made aware of different forms of e-resources and to access them. They need skills for the effective utilisation of the resources and also supporting facilities and equipment to access e-resources. Also, with the growth of e-resources collection in various medical institutions demands for them are on the rise by the teaching faculty members in general and clinical teaching in particular. In this context, the e-resources have become boon to the medical teaching faculty (Rajender Kumar, 2016) and the utilisation of e-resources by them in order to improve their quality of teaching and learning plays a vital role in health science education and research. This study has been undertaken to create awareness and to know the utilisation of e-resources and also make use of web and internet tools in this context.

2.Literature Review

Fry (2011) in the study conducted in 2010 at the Bowling Green University, Ohio, the library personnel "designed and conducted a usability study of key parts of the library web site, focusing on the web pages generated by the library's electronic resources management system (ERM)." The study collected the complete details of the library's databases. The purpose of the study was to find out "how far users could find and choose e-resources and identify ways that the library could improve access to e-resources through its web site." In conclusion, the author on the usability of the library web site found "47 students at BGSU find and choose databases, and further these findings relate to "current research about user behavior, and further it makes recommendations for increasing the student's use of library e-Resources."

Rao and Mudhol (2017) in their study attribute "Manipal University Health Sciences Library, at Manipal as "one of the largest libraries in South East Asia." Their study of the Library they state the library has a "rich array of information resources for pursuing discovery and research and has access to a variety of e-Resources, comprising 18 online databases, more than 2500 online journals and e-books, and these have been made available to library users via various user interfaces." The study further observed that "63 users expressed frustration with navigating these different interfaces and library after being aware of the fact that Health Sciences Library required a solution to access all library e-resources from a single access point." This paper gives the details on the "ERMSS software which has provided library users with a single point access for effective searching of e-resources held by the library, and it is found that the software meets the challenges and with a robust administrative module has enabled a single point of access to entire e-resource collection of the library."

Rao & Choudhury (2009) in their paper entitled "Availability of Electronic resources at NIT Libraries in India: A Study" investigate the availability of e-resources at all the National Institutes of Technology (NITs) libraries spread throughout the country. The entire collection of e-resources comprise; "online journals databases, CD-ROM and audio/video course materials." The survey further "finds the majority of libraries use 11 to 15 number of online journals databases, whereas 25 percent of libraries have the facility of more than 16 online journals databases." In a continued analysis, it was found 20% libraries pointed having less than ten online journals databases at their end. "A total of 85 percent of libraries have the facilities of e-resources in CO-ROMs/DVDs, and 90 percent of libraries obtain audio/video course materials. The zone-wise assessment revealed the south zone (75%) libraries are better placed on the availability of e-resources compared to other zones libraries.

The paper by **Shukla & Mishra (2011)** reports the study of Institute of Technology of Banaras Hindu University, Varanasi. The study involving research scholars of the Institute has attempted to know the awareness on the making use of e-resources, and contextually the study highlights "the problems faced by them in accessing e-Resources". The authors view the "usefulness of e-resources compared to print resources and the place from where they prefer to access information." It is found that the respondents preferred the e-resources more than print resources because of various features of e-resources and "in future it was considered to have more e-resources within university campus with better internet connectivity".

Vohra (2003) the study shows that "in the current electronic information environment emphasis is towards excellent collection than large collection and development of effective means of gaining access to remote databases." It is well known that the world wide web has been huge "storehouse of all world resources in the electronic form, and the paper examined the impact of the information technology on libraries." It is found that this impact is reflected in "development of digital libraries, the Internet, electronic publications, CD-ROMs etc." It is further stated that e-resources have been due to better and enhanced "storage, retrieval, preservation and conservation facilities and also computerised information system and services."

Joteen Singh et al.(2009) have made a study "on the use of internet-based e-resources at Manipur University to examine the use of e-information focusing on the internet services by postgraduate students, research scholars, teachers and non-teaching staff members" The study has found that the" users were using the internet mainly to download the information from web-based resources and websites." The users have also expressed some problems experienced by them such as lack of continuous power supply, low speed of internet and so on.

Bashorun, et al., (2011) from their study on the "frequency of use of e-resources by teaching staff "found that it was low, as most of the faculty spend their time in teaching work. The study has for the low use of e-resource has identified the "problems like lack of awareness on the use of e-resources provided by the library, lack of electricity supply to use a computer, slow speed of the network, and inadequate searching skills."

In another study, Kumar & Kumar found, that the user of "medical and management colleges in Bangalore are well aware of e-resources and prefer to use the internet."

3.Objectives

- To know the frequency of use of the library by faculty members
- To analyse the extent of access to e-resources by the respondents
- To explore various forms of e-resources used by the faculty of KIMS
- To examine the kinds of online medical databases used by the faculty members.
- To examine the purpose of using different types of E-resources by the faculty of KIMS.
- To recognise the problems faced by the faculty in the course of using e-resources.

4. Methodology

The study for the collection of relevant data designed a structured questionnaire which has been distributed among the 150 faculty members of Kempegowda Institute of Medical Sciences, Bangalore. All the 150 questionnaires have been collected from the respective respondents for the data organisation, analysis and interpretations of data. So, the response was 100%. The data supplied by the respondents from the questionnaires have been used for tabulation and presentation using the MS Excel package.

5.Data Analysis

The data collected from the respondents are presented in Tables and Figures, and the same was followed up with analysis and interpretation of the behaviour of data. The systematic analysis of interpretations and inferences are discussed in the forthcoming sections.

5.1 Designation of Faculty Members:

In reality, there are three general designations under which the faculty member is categorised as; Professors, Associate Professors and Assistant Professors. So, the study considered it as basic to analyse the data by the categories of faculty designations the data is presented in Table -1.

Table – 1: Distribution of Data by Faculty Designation

Designation	No. of respondents	% age
Professors	28	18.67
Associate Professors	29	19.33
Assistant Professors/Lecturers	93	62.00
Total	150	100

Table -1 reveals the designations of all the 150 faculty members. The distribution shows; 93(62%) faculty with highest numbers belong to the designation of Assistant Professors/Lecturers, while, the Associate Professors account for 29 (19.33%) and the least being the Professors with 28 (18.67) respondents. It is a normal distribution, and generally, there is presumable ration of 1:2:3 in the categories teaching staff by their ranks as; Professors, Association Professors and Assistant Professors/Lecturers. However, due to time-bound

promotional policies adopted by most of the educational institutions, the ratio could not be strictly maintained now.

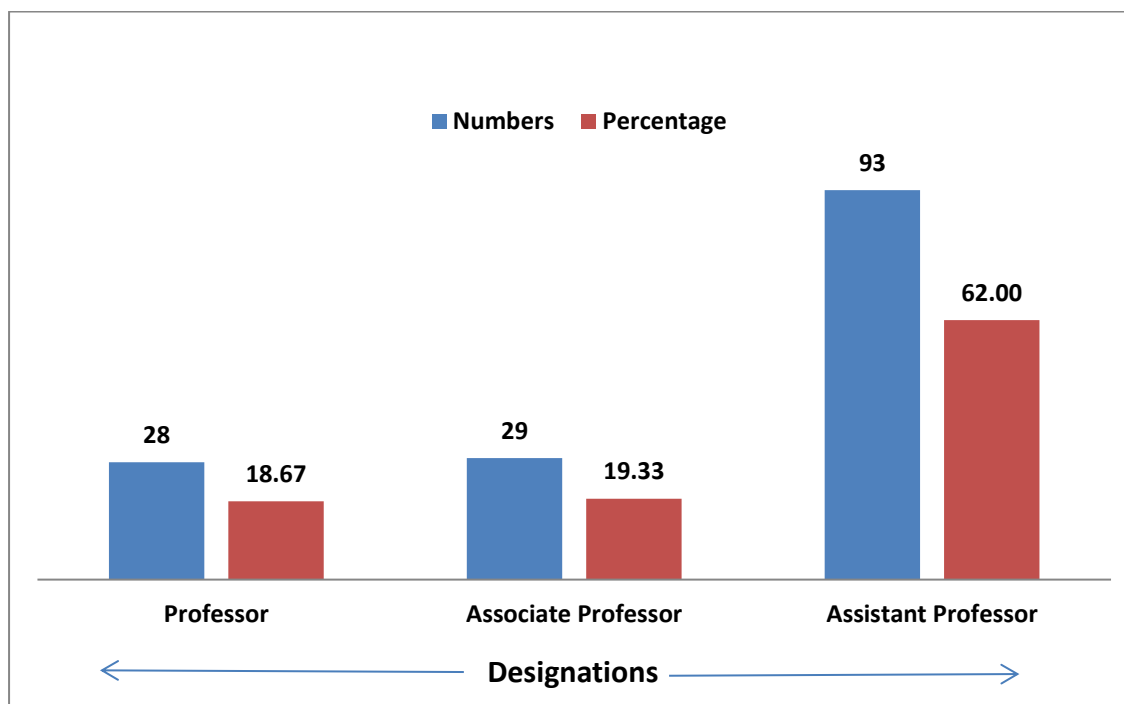


Fig-1: Designations of Faculty Members

5.2 Frequency of Library Visit:

The users' visit to library denotes the use of library resources and access to various reading materials, including e-resources and their demands. So, the Table –2 presents the data on the frequency of library visits by faculty distributed by their designation.

Table-2: Frequency of Library visit by Designation

Designation	Daily	Thrice a week	Once in a week	Once in Fortnight
Professors	5	8	13	2
Associate Professors	12	8	4	5
Assistant Professors/ Lecturers	16	30	30	17
Total (N=150)	33 (22%)	46 (30.6%)	47 (31.3%)	24 (16%)

It is evident from Table-2 that most visits by all categories are Once a week, with 47(31.3%) of them visit the library with this frequency. The next is Thrice a Week with 46 (30.6%) visiting the library the least being the Fortnightly visit with 24 (16%) in number.

By designation, the Associate Professors/Lectures visit the library at regular frequencies and that thrice a week and fortnightly visits are higher with 30 numbers each. The others, the professors and Associate professors, visit less frequently, obviously because the former have administrative responsibility along with teaching work.

5.3 Access to the Internet by Respondents:

The effective use of e-resources should ensure good computer and internet knowledge, right from access and search the resources by various search methods and techniques. It is, therefore, with this intent, a question was put to the respondents about the frequency of access and use of the internet, the respondent data is presented in Table - 2.

Table- 3: Frequency of access to internet

Designation	Daily	Thrice a week	Once in a week	Once in Fortnight
Professors	15	6	5	2
Associate Professors	20	5	3	1
Lecturers/Assistant Professors	40	30	20	3
Total (N=150)	75(50%)	41 (27.3%)	28 (18.6%)	6(4%)

The Table-3 reveals that majority of 75(50%) the respondents access the internet daily, and it is quite obvious. The next frequency is thrice a week with 41 (27.3%) respondents access the internet, and only 28(18.6%) of the respondents access the internet once in a week. Only meagre 6(4%) of the respondents access the internet once in a fortnight.

5.4 Use of Web Browsers:

The prerequisite for internet and the Web use is knowledge of Web Browsers which enable browsing and hypertext navigation. There is a number of web browsers which are operating in the different operating system environment. So, the study explored the use of Web browsers by the respondents. The responses are presented in Table – 4. In this context, the users knowledge of six web browsers was sought and presented.

Table-4: Use of Web browsers

SI No.	Web Browsers	No. Faculty	%age
1	Google Chrome	100	66.67
2	Mozilla Fire fox	22	14.66
3	Internet Explorer	16	10.66
4	Opera	4	2.67
5	UC Browsers	4	2.67
6	Netscape Browsers	4	2.67
Total		150	100

From the Table- 4, it is observed that 100 (66.6%) respondents are using Google Chrome, which is the highest priority, whereas 22(14.6%) of them are using Mozilla Firefox. Only 16(10.6%) respondents are using Internet Explorer, and only a meagre 2.6% are using Opera, UC Browsers, and Netscape browsers, respectively. The last two have been not much-preferred Web browsers in the entire IT environment.

5.5 Use of Search Engines:

The next web search tool after the Web browsers is the Search Engine, and knowledge of search engine(s) is equally essential and important, so the study considered some four widely used search engines. In fact, it also considered Rediff Web Portal as a search engine, because of its very meagre response it was not reckoned here. The data on the use of search engines by respondents are presented in Table – 5.

Table-5: Use of Search Engines

SI No.	Search Engines	No. Faculty (N=150)	%age
1	Google	114	76.00
2	Yahoo	14	9.33
3	Ask.com	10	6.67
4	Bing	10	6.67
Total		148*	98.67

Table- 5 reveals that 114(76%) faculty respondents are utilising Google search engines for browsing and navigating the web and for search and access to information based on the provided search keyword or term. This is quite natural as most of the users in all levels use

Google. Whereas 14 (9.3%) use Yahoo the next popular search engine, even though this is earlier to Google. The remaining two search engines Ask, and Bing is used to the extent of 6.6% only, and a meagre 1.3% are using Rediff.

5.6 Use of e-resources by faculty:

The next and important data analysis is on the use of e-resources and other factors on their use. There are many types of e-resources of which Six are widely used and referred, so the data on their use by faculty are presented in Table -6.

Table-6: Use of different types of e-resources by faculty

E-Resources	Designation			Total N=150
	Professors	Associate Professors	Asst. Professors/Lecturers	
E-Books	8 (13.3%)	20 (33.4%)	32 (53.4%)	60 (40%)
E-Journals	18 (23%)	26 (33.4%)	34(43.5%)	78 (52%)
E-Newspaper	12 (16.9%)	34 (47.8%)	25 (32.0%)	71 (47.33%)
E-Magazines	6 (10%)	32 (53.4%)	22 (36.7%)	60 (40%)
E-Thesis	14 (20.5%)	26 (38.2%)	28 (41.1%)	68 (45.33%)
E-Databases	12 (17.3%)	28 (40.5%)	29 (42.0%)	69 (46%)
E-Reports	10 (17.2%)	22 (37.9%)	26 (44.8%)	58 (38.66%)

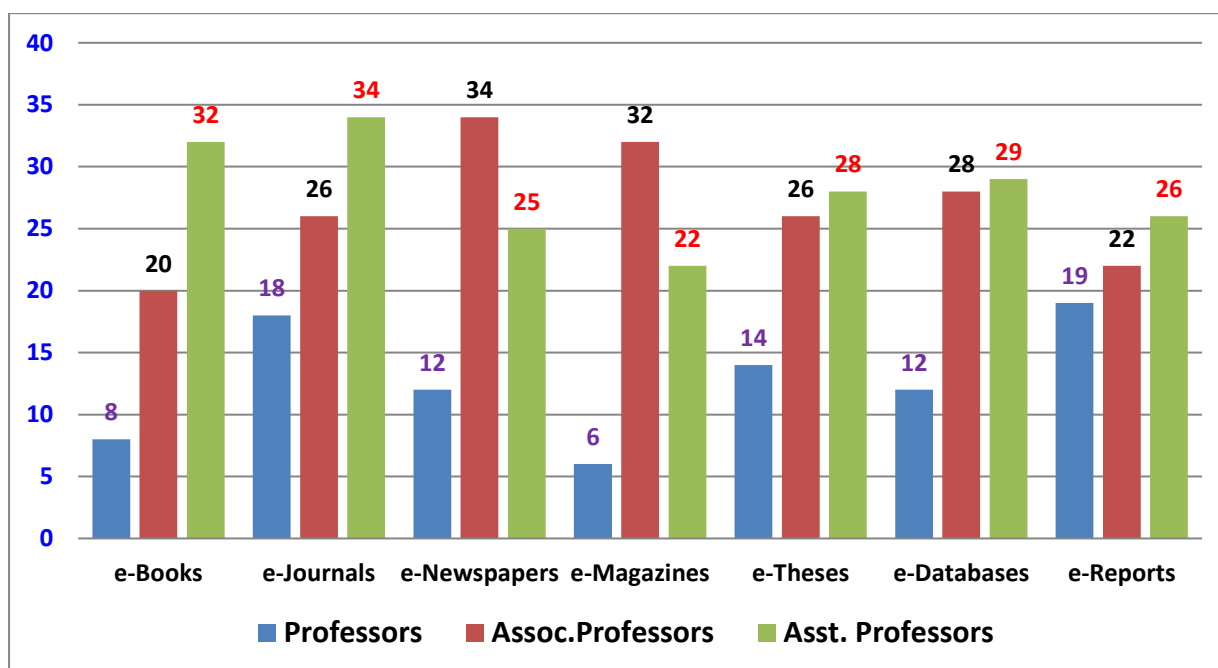


Fig-2: Use of Types of e-resources by faculty

Table- 6 presents the data on the use of different forms of e-resources by the respondents. Among the preferred forms of E-resources are; E-Journals E-Newspapers and the

E-Databases which are the most used with 78 (52%), 71(47.33%) and 69(46%) of respondents respectively. It is interesting to note that out the total 150 only (60) 40% use E-Books, which is less than even Theses which are specialised documents and only 58(38.66%) use another technical document, the E-Reports.

5.7 On the Purpose of Using e-Resources:

In an academic institution, the purpose of using any information resources is confined to academic work, like teaching, classwork preparation or research. In the case of Medical Education, it might seem at to Hospital and Clinical use and patient care. The data on these purposes of the use of e-resources by the faculty was sought, and the same is presented in Table-7.

Table-7: On the Purpose of using e-Resources

SI No.	Purpose	No. Faculty (N= 150)	%age
1	For preparation class teaching	72	48.00
2	Education	39	26.00
3	For Research	55	36.67
4	Patient Care	45	30.00
5	Health Information	56	37.33
6	Entertainment	25	16.67

Table – 7 highlights that, the common academic activity of class preparation is the major purpose with 72 (48%0 respondents are using e-Resources. The health information needs and research purpose rank next with 56 (37.33%) and 55 (36.67%) respondents, respectively. From the remaining purposes, 26% are using for education, 30% are using for Patient Care, and only 16.67% of respondents are using them for entertainment.

5.8 Levels of Satisfaction of Using e-Resources:

The previous sections have dealt with quantitative responses; this section shows some qualitative response of the faculty on the satisfactory levels on the use of e-resources, and the data are presented in Table- 8.

Table- 8: Levels of Satisfaction on the use of e-resources by faculty

Satisfaction Level	Professors	Associate Professors	Asst. Professors/Lecturers	Total N=150

Very Satisfied	10(16.1%)	20 (32.2%)	32 (51.6%)	62 (41.33%)
Some What Satisfied	10 (17.8%)	6 (10.7%)	40(71.4%)	56(37.33%)
Dissatisfied	8 (25%)	3 (9.3%)	21 (65.6)	32 (21.33%)

The data from Table-8 reveals that 62 (41.33%) respondents, being the highest out of total 150 respondents are very satisfied for the e-resources available in their library and on the other hand 56 (37.33%) and 32 (21.33%) respondents are somewhat satisfied and dissatisfied respectively. It can be pointed out that 32.2% of Associate Professors and 51.6% of Asst. Professors/Lecturers who are more active in academic work feel very satisfied and also somewhat satisfied with the use of e-resources available in the library.

5.9 Use of Consortia-based Medical Databases:

The libraries under study have been subscribing to the HELINET and EDUMED databases through consortia. The Table-9 presents the data on their use by faculty.

Table- 9: Use of e-resources from consortia based Medical Databases

Database	Professors	Associate Professors	Asst. Professors/Lecturers	Total N=150
HELINET	15 (15.1%)	17 (17.1%)	67 (67.7%)	99 (66%)
EDUMED	13 (25.5%)	12 (23.5%)	26 (50.9%)	51 (34%)

It is observed from the Table-9 that 99(66%) faculty respondents are accessing HELINET, and only 51(34%) are accessing EDUMED for their information needs.

5.10 Barriers to using e-Resources:

Even with all the resources are available, to use them smoothly and seamlessly there is a need for suitable infrastructure especially, the computer and communication technological facilities. However, the respondents expressed certain barriers and their feedback was sought, and their response data are presented in Table -10.

Table- 10: Barriers in using e-Resources

Sl No.	Barriers	No. Faculty (N= 150)
1	Lack of IT Knowledge	12 (8%)
2	Difficulty in finding relevant information	20 (13.3%)
3	Lack of Subject Coverage	18 (12%)

4	Lack of training	24(16%)
5	Lack of time	32 (21.3%)
6	Slow access speed	15 (10%)
7	Information Overload	17 (11.3%)
8	Easy and convenient using print media	12 (8 %)

The Table-10 has listed some common and ever faced problems faced by the users of e-resources in general and the faculty members in the context of this study.

The major barriers in using e-resources were lack of time with the highest 32 (21.3%) responses. The lack of training 24 (16%) responses comes next. The difficulty in finding relevant information 20(13.3%) is the third problem in that order. The other issues are; Lack of Subject Coverage 12%, Information Overload 11.3%, slow access speed 10% and 8% each for Print media as easy and the Lack of IT literacy with 8% come consecutively next.,.

6. Major Findings of the Study

The major findings of the study are as follows:

- Majority of the Faculty belong to the Assistant Professor/Lecturers Category (62%)
- It is found that majority of 31.3 % of respondents visit the library once a week.
- Majority of 50% respondents, it is found access internet daily.
- It is found the highest number of respondents, 66.6% use Google Chrome Browser, and 76% of them use Google search engines for accessing information from the web.
- A Majority of 52% of respondents are using e-Journals, and that maximum number of them prefers e- Journals compared to other types of e-Resources.
- It is found from the analysis of data that 48% of respondents are use e-resources to prepare for classwork.
- As for satisfaction towards e-Resources, it is found 41.33% of respondents are satisfied, 37.33% are somewhat satisfied with e-resources available in the library.
- The Health Science Consortia Portal, HELINET usage higher than that of EDUMED usage found from the respondents.
- The major reasons for less use of e-resources are found to be lack of time and lack of training in finding relevant information; 21.3% and 16% respectively.

7. Conclusion

The health science information systems were first to adopt the electronic media for the publication of scholarly literature as found from the first product of Silver Platter, Medline CD-ROM. Hence the present study has considered to examines the usage pattern of e-resources

among the faculty members of Kempegowda Institute of Medical Sciences (KIMS), Bangalore. The study shows the use of e-resources is very common among the faculty members of KIMS and especially the use of e-journals. Most of the faculty members are satisfied and somewhat satisfied with available E-resources and IT-based services offered by the library and information centre. It can be concluded that more awareness should be created among the faculty members about the availability of the electronic resources and electronic services offered by the library and information centre. It is in this context the libraries should offer intensive information literacy training to the users of e-resources as also found from this study

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