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Webometric Analysis of Selected Universities Websites in Karnataka: An Evaluative Study Using Alexa Internet

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***Abstract* - The present study provides an overall picture of selected University websites in Karnataka and its status in terms of their performances on the web based on the eight indexes of Alexa internet evaluation tool. University of Mysore and Bangalore University stands top in traffic rank in India with 6,745, and 7,063 respectively. Others have weak performance and have high traffic ranks. Global traffic rank same two Universities traffic rank is less than 10,000, which projects their good performance in this attribute while compared to others. The downloading speed and bounce rate of most of the university are not satisfactory. Only few universities downloading speed is high. Kuvempu University shows the (21.20%) lowest rate of bounce percentage. The results of this study may helpful for web site managers.**
Keywords: **Webometrics, University Website, Alexa Internet, Traffic Rank**

I. INTRODUCTION

India as a powerful and enormous human resource and it has given topmost priority to education for its overall development. Higher education is an important component in the progress of Human resources development. Within India Karnataka is one of the pioneering states which is having good Higher education platform. A considerable progress has been made in Karnataka with the establishment of a large number of universities. Any university website can be used for several purposes it enables the users to get more information of the particular organization. Nowadays in the ICT era web information resources provided through websites of the organisations has become one of the influential factors in the research activities of an any higher educational organisations like universities. And therefore, Webometric analysis of universities is a suitable study to the research field in the subject category of Library and Information Science.

II. WEBOMETRICS

Webometrics is a quantitative study of web-related phenomena. It is a Content Analysis of websites concerned with measuring aspects of the web: web sites, web pages, parts of web pages, words in web pages, hyperlinks, web search engine results. Webometrics is huge and easily accessible source of information, there are limitless possibilities for measuring or counting on a huge scale of the number of web pages, the number of web sites, the number of blogs) or on a smaller scale. Bojorneborne defined webometrics as: "the study of the quantitative aspects of the construction and use of information resources, structures and technologies on the web, drawing on bibliometric and informetric approaches".

III. ALEXA INTERNET

Alexa Internet started in April 1996 by American web entrepreneurs Brewster Kahle and Bruce Gilliat and presently it is a subsidiary company of Amazon.com which provides commercial web traffic data. Alexa data is collected from millions of its Toolbar users. Alexa offers various websites attributes which are formed the foundation of evaluation in the present study. Alexa provides rankings of sites based on visitor hits. Alexa's traffic estimates are based on a diverse sample of millions of worldwide internet users. Traffic data of Alexa are gathered from computers which the Alexa's toolbar is installed on them. Alexa provides two traffic rankings. The first rank is site's rank according to visitors of the country, and the other is global rank which is site's rank according to visitors around the world. Alexa tracks over 30 million websites. Sorting is based on the three-month Alexa traffic rank. It also Provides Page views: which measure the number of pages viewed by site visitors. Multiple page views of the same page made by the same user on the same day are counted only once. The page views per user numbers are the average numbers of unique pages viewed per user per day by the visitors to the site, Links which includes a number of web sites connected to a certain web site which shows its popularity, Speed: Web pages downloading speed that reflects the average time for opening pages of a certain web site, Bounce percentage: Estimated percentage of visits that consist of a single page view, Time on site: which is Estimated daily time on site, Search percentage: Percentage of visits that came from a search engine and Audience Geography: The percentage of people who visit a web site (local and International).

IV. OBJECTIVES OF THE STUDY

The objective of this study is to evaluate the selected Universities websites in Karnataka based on Alexa indexes

including: traffic rank, pages viewed, speed, links, bounce percentage, time on site, search percentage, Indian and foreign users.

V. SCOPE OF THE STUDY

The scope is covered and limited to 12 selected Government Universities listed on the website of the Karnataka State higher education council as taken as a sample for evaluation.

VI. LITERATURE REVIEW

Webometrics analysis provides useful information to the users. It also estimates sites validation and popularity. Previously there are number of studies conducted by various professionals on different websites using Alexa Internet data analysis tool. Here we made an attempt to list out some of the very recent webometrics studies using Alexa Internet as tool for evaluation.

Govindarajan and Dhanavandan (2016) evaluate the websites of Ophthalmologist associations in India and found that All India Ophthalmic Society (AIOS) is the most popular website and is in the first place among all the associations' website. It holds the global rank of 965269. Chandigarh Ophthalmologist website holds the highest bounce rate of 82.0. holds the highest links of 177.

Naheem and Rao (2016) analysed the 8 leading Telugu newspaper websites from the state of Andhra Pradesh and found that the websites of the newspaper “Eenadu” has the highest traffic rank in both local & global, daily time spent on site by the visitors, number of links and the highest number of foreign users.

Stephen (2017) he evaluates the websites of Ministry of Electronics and Information Technology Organizations in India. He found that Among the all-organisations websites National Institute of Electronics and Information Technology (NIELIT) websites holds first rank and overall NIELIT websites holds second rank.

Muthuraja and Veerabasavaiah (2018) did evaluation of 10 kannada newspapers websites from Karnataka and found in their study result that Vijayakarnataka has 2,255 the highest traffic rank in India Udayavani has 27,903 the highest traffic rank in global. Vijayakarnataka has 7.32 having highest number of average pages viewed per day and 12:40 estimated daily time spent on site by the visitors.

VII. METHODOLOGY

The present webometric study has been done by using of Alexa internet tool. Alexa data bank is known as the most famous tool for evaluating websites. In this research, we have selected eight indexes: they are traffic rank, pages viewed, links, bounce percentage, time on site, speed, search percentage, Indian and foreign users in order to analyse Universities websites in Karnataka The URLs/ website of these universities were collected from the internet. For the evaluation each university web site was searched in Alexa website (www.alexa.com) and all the data were obtained for analysis. The Collected data were gathered, tabulated and visualized with specially designed Microsoft Excel worksheet. Then data were analysed and tabulated to relevant findings in accordance with the desired objectives. Below table explains the data related to Name of the University and its URL which are used for the study.

TABLE I LIST OF UNIVERSITIES AND ITS URL

Sl. No.	Name of the University	URL
1	Karnataka University Dharwad (KUD)	https://www.kud.ac.in/
2	Mysore University Mysore (UOM)	http://www.uni-mysore.ac.in/
3	Bangalore University Bangalore (BUB)	http://bangaloreuniversity.ac.in/
4	Kuvempu University Shivamogga (KUS)	http://www.kuvempu.ac.in/
5	Mangalore University Mangalore (MUM)	https://mangaloreuniversity.ac.in/
6	Gulbarga University Gulbarga (GUG)	https://gug.ac.in/
7	Akkamahadevi Women's University – Vijayapura (AKWUV)	http://www.kswu.ac.in/
8	Kannada University Hampi (KUH)	http://www.kannadauniversity.org/kannada/
9	Tumkur University Tumakur (TUT)	http://tumkuruniversity.ac.in/
10	Davangere University Davangere (DUD)	http://davangereuniversity.ac.in/
11	Ranichennamma University Belagavi (RCU)	http://rcub.ac.in/
12	Vijayanagara Sri Krishnadevaraya University Bellary (VKU)	http://vskub.ac.in/

VIII. DATA ANALYSIS AND INTREPRETATION

The data regarding Karnataka Universities web sites for eight indexes as obtained from Alexa Internet is presented in the following tables.

TABLE II CUMULATIVE DATA OBTAINED FROM ALEXA INTERNET

Name of The University	Traffic Rank		Pages viewed	Time on site	Links	Speed	Bounce rate %	Search %	Users Percentage	
	India	Global							India %	Others %
KUD	12,015	1,62,609	2.8	02:58	319	1.161	33.10	36.40	98.20	1.80
UOM	6,745	68,818	4	03:42	802	0.907	38.50	51.40	90.80	9.20
BUB	7,063	95,627	3.2	03:08	445	1.569	30.70	50.00	89.30	10.70
KUS	27,541	3,08,976	3.2	02:41	263	0	21.20	38.50	100.00	0.00
MUM	16,060	1,92,109	3.5	03:24	319	1.131	41.00	45.50	89.90	10.10
GUG	23,033	2,78,006	2.3	03:17	172	0	35.90	33.60	99.60	0.40
AKWUV	34,076	4,49,876	2.3	01:31	154	0	29.20	60.10	99.80	0.20
KUH	1,04,246	11,68,373	4	03:52	137	0	31.70	48.30	96.00	4.00
TUT	46,271	5,14,927	2.7	03:11	156	0	34.40	38.00	97.60	2.40
DUD	25,167	3,41,923	2	02:08	170	0	52.30	30.00	97.60	2.40
RCU	27,940	2,79,380	2.7	01:39	225	0	40.20	37.60	100.00	0.00
VKU	61,083	6,21,133	3	03:33	184	0	43.10	57.00	95.10	4.90

A. Traffic Rank

It is based on the amount of traffic recorded from users that have the Alexa toolbar installed over a period of three months. This traffic is based on such parameters as reach and page views. The reach refers to the number of Alexa's users who visit a particular site in one day. Page view, as its name shows, is the number of times a particular page (URL) is viewed by Alexa's users. Alexa.com says that, if a particular user visits the same URL multiple times on the same day, all those visits will be counted as one. The first step of the ranking process is calculating the reach and number of page views for all the sites on the Web on a daily basis. The Alexa ranking is obtained by performing the geometric mean of reach and page views, averaged over a predefined period of time (three months).

Fig. 1 Traffic Rank in India

University of Mysore and Bangalore University are stands top with regard to the attribute traffic rank in India. University of Mysore and Bangalore University has with traffic ranks 6,745, and 7,063 respectively. Apart from University of Mysore and Bangalore University all other Universities has high traffic ranks, which shows their weak performance on this account. Out of the 12 Universities, only 2 have traffic rank of less than 10,000, which projects their good performance in this attribute while compared to others.

Fig. 2 Traffic Rank in Global

From the above figure it is observed that in Global traffic rank the same universities University of Mysore and Bangalore University have traffic rank less than 1,00,000. Rest of the universities has very weak performance.

B. Page Views

It is an estimated percentage of global page views. Page views measure the number of pages viewed by site visitors.

Multiple page views of the same page made by the same user on the same day are counted only once. The page views per user numbers are the average numbers of unique pages viewed per user per day by the visitors to the site. Mysore University and Kannada University is having highest number of average pages viewed by users per day (4), followed by Mangalore University (3.5). Davanagere University has the (2) lowest number of average page views.

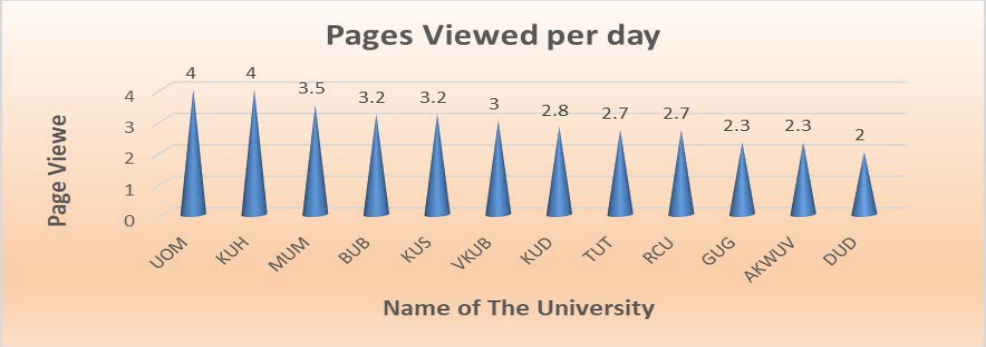

Fig. 3 Pages Viewed per day

C. Time on Site

According to Alexa internet Estimated daily time on site (mm:ss) method. The estimated daily time spent on site by the visitors is highest for Kannada University (03:52), Mysore University is in second place with (3:42) followed by Vijayanagara Sri Krishnadevaraya University with (3:33) and Ranichennamma University has the lowest in this category (1.39).

D. Links

A measure of reputation, which includes a number of web sites connected to a certain web site which shows its popularity. Among 12 Karnataka Universities Mysore University (802) has the highest number of links. Bangalore University with 445 links secured second place, Karnataka University and Mangalore University is in third place got 319 links. Kannada University with 137 links is the least among them.

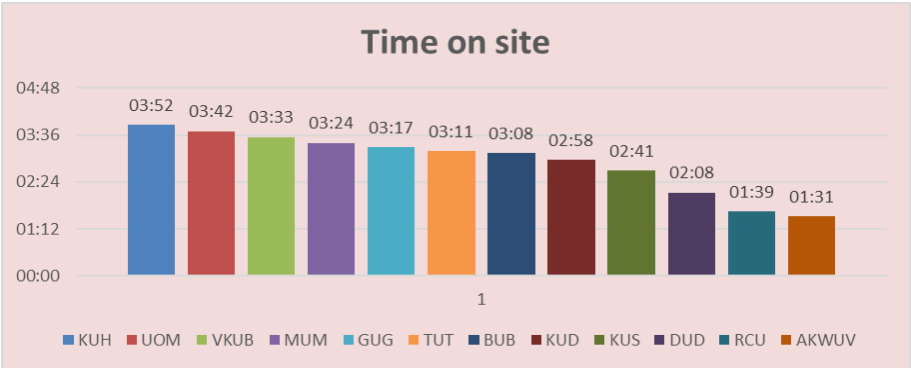

Fig. 4 Time on site

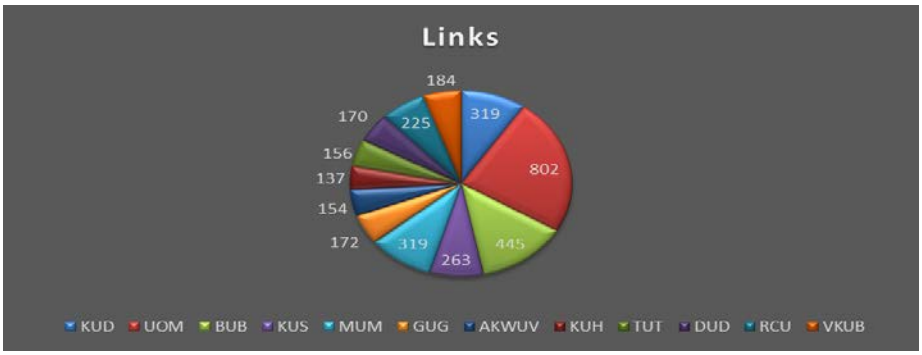

Fig. 5 Links in the Website

E. Bounce Rate/ Percentage

Estimated percentage of visits that consist of a single page view called bounce rate. Davanagere University with (52.30%) has the high-rate bounce percentage, followed by Vijayanagara Sri Krishnadevaraya University with (43.10%) shows its weak performance. Kuvempu University shows the (21.20%) lowest rate of bounce percentage. The higher bounce rate in most of the University websites indicates their weak performance.

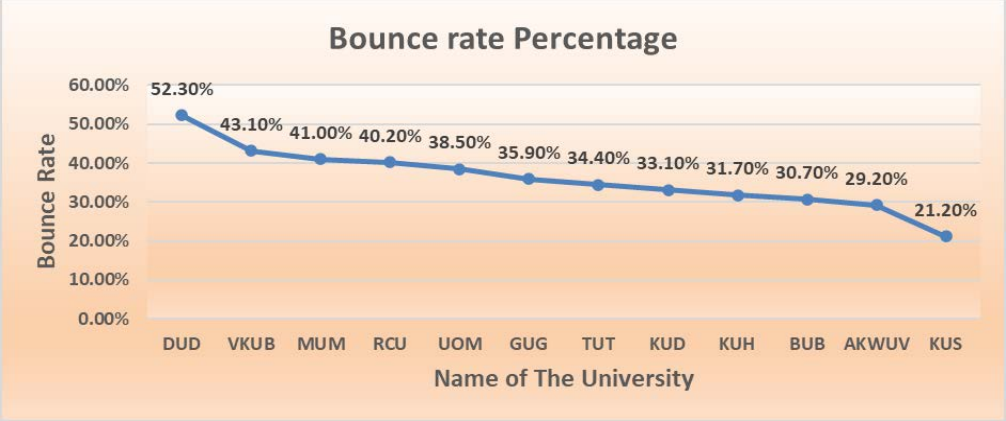

Fig. 6 Bounce Rate/ percentage

F. Downloading Speed

Speed is the measure of average load time. Web pages downloading speed that reflects the average time for opening pages of a certain web site.

In this category, Bangalore University has the highest speed (1.569). Karnataka University has the 1.161 downloading speed and stands in second place and Mangalore University is in third place with 1.131 seconds of downloading speed.In this attribute only few websites speed is available from alexa.

G. Search Percentage

Estimated percentage of visits that came from a search engine. The highest percentage of visits that came from search engines is for Akkamahadevi Women's University with (60.10%) and with (57.00%) Vijayanagara Sri Krishnadevaraya University is in second highest. The lowest is Davanagere University with (30.00%) followed by Gulabrga University (33.60%).

H. Audience Geography

It shows the percentage of people who visit a web site (local and international).

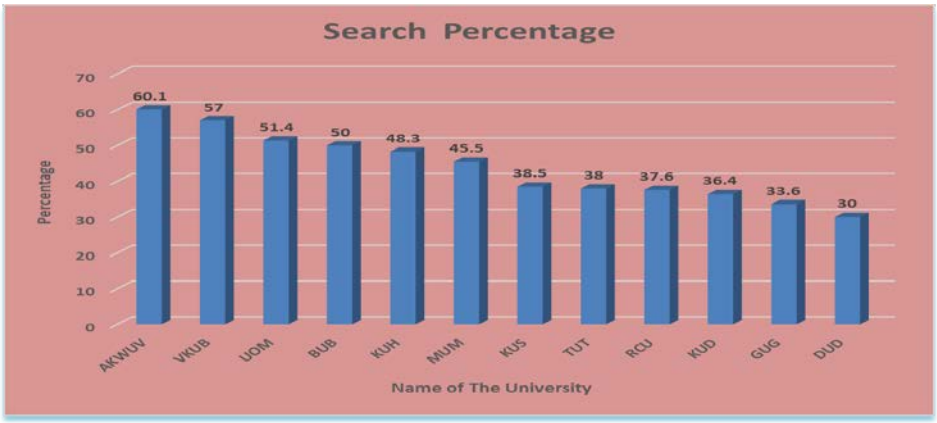

Fig. 7 Search percentage

Table III Indicates the percentage of

India: The top 3 highest percentage of users is for India are Kuvempu University and Ranichennamma University with (100.00%) followed by Akkamahadevi Women's University (99.80%) users and Gulbarga University got (99.60%) users and Bangalore University (89.30%) has the lowest percentage of users in India.

Others: Bangalore University has highest percentage of users (10.70%) while it has lowest rate in India and Kuvempu university and Ranichennamma University has (0.00%) lowest rate of users in foreign but it has highest percentage of users in India.

TABLE III INDIAN AND FOREIGN USERS

Sl. No.	Name of The University	Percentage of Indian and others visitors
1	Karnataka University Dharwad	India (98.20), others (1.80)
2	Mysore University Mysore	India (90.80), others (9.20)
3	Bangalore University Bangalore	India (89.30), others (10.70)
4	Kuvempu University Shivamogga	India (100), others (0)
5	Mangalore University Mangalore	India (89.90), others (10.10)
6	Gulbarga University Gulbarga	India (99.60), others (0.40)
7	Akkamahadevi Women's University, Vijayapura	India (99.80), others (0.20)
8	Kannada University Hampi	India (96.00), others (4.00)
9	Tumkur University Tumakur	India (97.60), others (2.40)
10	Davangere University Davangere	India (97.60), others (2.40)
11	Ranichennamma University Belagavi	India (100.00), others (0)
12	Vijayanagara Sri Krishnadevaraya University Bellary	India (95.10), others (4.90)

IX. CONCLUSION

The result of this study gives an overall preview of the selected universities of Karnataka websites traffic and page ranks of local and foreign. The purpose of this website evaluation using Alexa Internet tool helps the webmaster and the respective university websites to improvise the usability of their websites. This study will also facilitate librarians and anybody interested to enhance usage of a web site by analysing the web site by means of the online website evaluation tools like Alexa internet. The present study has been exploratory and there is possibility to future research in this area.

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