Library Waves Volume 7, No. 2 (2021) ISSN 2455-2291 (Online)

# Webometric Analysis of State Universities in Karnataka: A Study

\* Shashikumar M C<sup>#</sup>

\*\*Chandrashekara M.

\* Research Scholar, DoS in Library and Information Science, University of Mysore, Mysuru (Karnataka) - 570005, INDIA; Email: shashimagudlu@gmail.com

\*\* Professor, DoS in Library and Information Science, University of Mysore, Mysuru (Karnataka) - 570005, INDIA; Email: chandra.uom@gmail.com

# Corresponding author.

Received: 11 November 2021

Accepted: 30 December 2021

#### Abstract

This Study examines and explores through a webometric analysis of the websites of 31 state universities in Karnataka. Identify the domain systems of the websites; a collection of statistics about WebPages (WIF), Link impact report, etc. The webometric data have been collected through the Google search engine. Results revealed that Bengaluru Dr. B. R. Ambedkar School of Economics University – Bengaluru gained1st rank in link pages Karanataka Veterinary, Animal & Fisheries Science University, Bidar got 1strank in Selflinking Pages, Davangere University, Davanagere occupied 1st in External link Pages.

Keywords: Webometric Analysis, State Universities, Karnataka, Google Search Engine.

### 1. Introduction

Webometrics is a scientific discipline that studies the quantitative aspects of information sources and their use. In other words, "webometrics try to measure the World Wide Web, analyses technology usage and allows us a simple content analysis" (Radek Malinský, 2012). Almind and Ingwersen introduced the term webometric in (1997). According to Björneborn and Ingwersen (2004), "webometrics is "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." The university websites introduce the University, Administration, Academics, examinations, research, facilities, departments, affiliated institutions, Libraries, faculty details, students and research scholars, alumni, and different types of committee details and results, etc. The websites play a significant role in the universities, and it shows the success of the universities. However, it is very challenging to get complete and reliable data for quantitative rankling. Therefore, an attempt has been made to take all the state universities in Karnataka with the help of appropriate webometric indicators.

# 2. Literature review

Yakymenko, Volodymyr Kazymyr; Svitlana Lytvyn (2020) this study focused on evaluating the Webometrics system. The system consists of four evaluation criteria weighted according to the degree of difficulty for the rankings. The results of the evaluation are presented. The main ideas of the system are presented.

Meisam Dastani, Somayeh Panahi, Masoumeh Sattari (2019) analyzed the websites of 41 Iranian Medical Sciences Universities, which were compiled on Webometrics.com. The results revealed that out of the 41 websites, only a few have high-quality content and strong links.

M., Atarodi, A., & Panahi, S. (2018) this study determines the webometrics of digital libraries of Iranian universities of medical sciences to evaluate the performance of their websites. The link to the university's digital library website is provided directly from the site. The exact location and size of the web pages are computed using the Google search engine. The number of links received for the websites of Iranian digital libraries has been calculated using the MOZ search engine (click here to get started). Most of the websites that were analyzed were not rated at all.

Svetal H. Shukla and Lalitha Poluru (2012) analyzed the presence of Indian State universities (173) on the World Wide web and found ways to improve their presence on the web. The data was collected from Google Scholar and Yahoo Site Explorer. The ranking method was then used to determine the level of connectivity among universities. Web crawler Socscibot 4 was used to examine the link visibility and create an opportunity file version (ADM) relying upon precis. Pajek, the software for massive community evaluation, is used as a graphical tool for developing inlinks topology. The importance of maintaining an academic repository and promoting open access to educational content was also noted.

S. Kothainayaki and S. Gopalakrishnan (2011) this study evaluated 54 Agricultural universities in India. University websites are often used for various purposes, such as academic publishing, research groups, and new publications. Therefore, there is a need to know about the websites of these academic organizations in India. There is a need and preference to know about universities' websites in well-known and Indian universities mainly. This study analyzed concepts like Alexa Traffic Rank, Google PageRank, and rich files.

Jeyshankar, R. and Babu, B. Ramesh (2009) this study was carried out on the websites of 45 universities of Tamil Nadu. The study analyzed the number of web pages and the link pages of the websites. It also ranks the websites according to the web impact factor (WIF), self-link web impact factor (SIF), and external link web impact factor (IGR). Few universities in Tamil Nadu have the highest number of web pages. Still, similarly, their link pages are minimal in number, and websites fall in the back of their simple, self-link and external hyperlink net impact element.

Björneborn, L., and Ingwersen, P. (2001) this study attempted to point to chosen regions of webometricsstudies that display interesting development and space for improvement and some presently a whole lot much less promising regions. The latest investigations of search engine coverage and overall performance are reviewed as a body for selected quality and content material analyses. This study also discussed the problems with measuring Web Impact Factors (Web-IF).

# **3.** Scope and Limitations of the Study

The study was conducted to know about the websites of Karnataka State Universities, web structure, length of the websites of the universities, and links of the universities in Karnataka. So there is a need for researching the location of web objects in different Universities. An

attempt has been made to investigate the location of common web objects or links in the home university websites of Karnataka and to find out the pattern followed in the majority of the universities.

# 4. Objectives of the study

- To find the motive of links between the university website in Karnataka.
- To identify and analyze websites of Universities in Karnataka.
- To identify the domain systems of University websites in Karnataka as per the Webpages.
- To count and rank the number of web pages, link pages, self-link pages, and external link pages on university websites in Karnataka.
- To find out the link patterns among the Universities in Karnataka.

# 5. Methodology

Webometric research used advanced query options of commercial search engines to obtain hyperlink counts. Primarily there are few search engines (Google, Yahoo! And Bing). Google search engine represents references selected to collect information for the calculation of web effect factor at exceptional stages as in step with the objective of this study. The data collection method extensively utilizes the particular keywords SITE and LINKSITE to collect the number of Web Pages, link pages, self-link pages, and external link pages, respectively, from the Google search engine database. We have been selected 31 state Universities in Karnataka out of 31 recognized by University Grant Commission, Delhi. The Universities are collected from the Site www.ugc.ac.in. on 12<sup>th</sup> September 2021 and recognized by UGC.

# **Use of Appropriate Query Syntax:**

While undertaking WIF's Study, which is essential to select a suitable search engine that will count the number of Web Pages on a Website and the number of pages linking to the website.

- site: www.uni-mysore.ac.in this will extract the number of web pages at the website under www.uni-mysore.ac.in.
- linksite: www.uni-mysore.ac.in it will retrieve total number of web pages linking to the website under www.uni-mysore.ac.in.
- linksite: www.uni-mysore.ac.in AND site: www.uni-mysore.ac.in -it will retrieve the total number of web pages linking to the website under www.uni-mysore.ac.in which provides hyperlinks which are called self-links pages (links from the same website.)
- linksite: www.uni-mysore.ac.in AND NOT site: www.uni-mysore.ac.in it provides the report of number of pages not under www.uni-mysore.ac.in it is called external links.

The data was collected on 12<sup>th</sup> September 2021. All the domain names were verified to check whether Google, Bing, and Yahoo! supported the site name. Finally, we have chosen the Google search engine for the study. A search was carried out for each of these domains to determine the total number of web pages, self-links and external links using the queries mentioned above.

# 6. Data analysis

State Universities of Karnataka were ranked by their simple web impact factor.

### 6.1 Domains of State Universities in Karnataka

Table 1 shows the classification of State Universities by their domain name; further, it shows the five types of domain extensions observed in the present study of the State Universities in Karnataka.

S. N.	Domain name	No. of Universities	Percentage (%)
1	.ac.in	23	74.19
2	.edu.in	05	16.12
3	.org	01	3.22
4	.gov.in	01	3.22
5	.nic.in	01	3.22
	Total	31	100.0

 Table - 1: the domain of State Universities in Karnataka

It is observed from the table 1, the most of the university websites have '.ac.in' (74.19 percent), 16.12 .edu.in extension and whereas three website has '.gov.in; .nic.in; .org.in' (3.22 percent) extension respectively.

# 6.2 Links Pages of State Universities in Karnataka

Table 2 illustrates the simple WIF rank distribution of the state universities' websites of Karnataka, according to their Simple Web Impact Factor. Dividing the number of link pages (B) by the number of Web Pages (A), the number of simple WIF (B/A) of each university is found.

A: No. of Web Pages

B: No of Links Pages to the Website

		No. of	No. of	Simple	
S. N.	Name of the University	Web	Links Pages	WIF	Rank
		Pages (A)	<b>(B)</b>	( <b>B</b> /A)	
	Bengaluru Dr. B. R. Ambedkar				
1	School of Economics	396	62,00,00,000	15,656	1
	University				
2	Kannada University	828	76,60,000	9.251	2
3	KSGH Music and Performing	342	17,10,000	5000	
	Arts University	542	17,10,000	3000	3
4	Gulbarga University	635	3,85,000	606.29	4
5	Maharani Cluster University	41	12,300	300	5
6	Bengaluru North University	1210	3,18,000	262.80	6
7	Bangalore University	2900	5,09,000	175.51	7
8	Karnataka Sanskrit University	12800	18,10,000	141.40	8
9	Bengaluru Central University	1860	172000	92.47	9
10	Kuvempu University	3040	1,93,000	63.48	10
11	National Law School of India University	9,730	5,99,000	61.56	11

Table - 2: Link pages of State Universities

12	Karnataka State Law University	496	24900	50.20	12
13	Karanataka University	4620	1,24,000	26.83	13
14	University of Agricultural Sciences	2390	47,700	19.95	14
15	Mysore University	62,200	9,39,000	15.09	15
16	Rani Channamma University	1,910	27200	14.24	16
17	Davangere University	720	8790	12.20	17
18	Karnataka State Open University	1010	6770	6.70	18
19	Tumkur University	6,100	27,200	4.45	19
20	Akkamahadevi women's University	456	1950	4.27	20
21	University of Agricultural Sciences, Dharwad	71,400	2,81,000	3.93	21
22	Mangalore University	12,900	47,100	3.65	22
23	University of Horticultural Sciences, Bagalkot	4180	14300	3.42	23
24	Karnataka Veterinary, Animal & Fisheries Science University	747	1970	2.63	24
25	Vijayanagara Sri Krishnadevaraya University	7130	18100	2.53	25
26	Karnataka State Rural Development and Panchayat Raj University	619	1200	1.93	26
27	Vesveswaraiah Technological University, Belagavi	3,42,000	5,96,000	1.74	27
28	Karnataka Folklore University	478	780	1.63	28
29	University of Agricultural Sciences, Raichur	41,100	57,100	1.38	29
30	Rajiv Gandhi University of Health Science	39,800	36,800	0.924	30
31	Mandya University	16000	698	0.043	31

It is evident from table 2 that the Bengaluru Dr. B. R. Ambedkar School of Economics University occupies first place with 62,00,00,000 link pages, 396 web pages, and simple Web Impact Factor number of is15,656. Second place goes to Kannada University, Hampi, with the number of links pages 76,60,000, number of web pages 828 and the simple Web Impact Factor 9.251. Third place goes to KSGH Music, and Performing Arts University, Mysuru, with the number of 17,10,000 link pages, 342 web pages, and a simple Web Impact Factor of 5000. Finally, though the Vesveswaraiah Technological University, Belagavi (3,42,000), has more web pages than the above three websites, it occupies 27th place because the number of link pages is significantly less than web pages.

# 6.3 Self-links (Hyperlinks) of State Universities in Karnataka

- A: Number of Web Pages in the Website.
- C: Number of Self-links pages in the Website.

	Table - 5: Sen-links of State Universities in Karnataka					
S. N.	Name of the University	No. of Web Pages (A)	No. of Links Pages (B)	Simple WIF (B/A)	Rank	
	Bengaluru Dr. B. R. Ambedkar	I ages (A)	(D)			
1	School of Economics University	396	62,00,00,000	15,656	1	
2	Kannada University	828	76,60,000	9.251	2	
3	KSGH Music and Performing Arts University	342	17,10,000	5000	3	
4	Gulbarga University	635	3,85,000	606.29	4	
5	Maharani Cluster University	41	12,300	300	5	
6	Bengaluru North University	1210	3,18,000	262.80	6	
7	Bangalore University	2900	5,09,000	175.51	7	
8	Karnataka Sanskrit University	12800	18,10,000	141.40	8	
9	Bengaluru Central University	1860	172000	92.47	9	
10	Kuvempu University	3040	1,93,000	63.48	10	
11	National Law School of India University	9,730	5,99,000	61.56	11	
12	Karnataka State Law University	496	24900	50.20	12	
13	Karanataka University	4620	1,24,000	26.83	12	
14	University of Agricultural Sciences	2390	47,700	19.95	13	
15	Mysore University	62,200	9,39,000	15.09	15	
16	Rani Channamma University	1,910	27200	14.24	16	
17	Davangere University	720	8790	12.20	10	
18	Karnataka State Open University	1010	6770	6.70	18	
19	Tumkur University	6,100	27,200	4.45	19	
20	Akkamahadevi women's University	456	1950	4.27	20	
20	University of Agricultural Sciences, Dharwad	71,400	2,81,000	3.93	20	
22	Mangalore University	12,900	47,100	3.65	21	
23	University of Horticultural Sciences, Bagalkot	4180	14300	3.42	23	
24	Karnataka Veterinary, Animal & Fisheries Science University	747	1970	2.63	24	
25	Vijayanagara Sri Krishnadevaraya University	7130	18100	2.53	25	
26	Karnataka State Rural Development and Panchayat Raj University	619	1200	1.93	26	
27	Vesveswaraiah Technological University, Belagavi	3,42,000	5,96,000	1.74	27	
28	Karnataka Folklore University	478	780	1.63	28	
29	University of Agricultural Sciences, Raichur	41,100	57,100	1.38	29	
30	Rajiv Gandhi University of Health Science	39,800	36,800	0.924	30	
31	Mandya University	16000	698	0.043	31	

 Table - 3: Self-links of State Universities in Karnataka

It is evident from table 3 the Karanataka Veterinary, Animal & Fisheries Science University, Bidar occupies first place with the number of self-link pages 193, the number of web pages 747, and self-link WIF 0.258. Davangere University, Davanagere occupies the send place with the number of self-link pages 180 number of web pages 720 and self-link WIF 0.25. Maharani Cluster University, Bengaluru occupies third place with the number of self-link pages 10 number of web pages 41 and self-link WIF 0.243 And Vesveswaraiah Technological University, Belagavi has occupied 21st position in the list with the number of self-link pages 2,450 number of web pages 3,42,000 and the self-link WIF 0.007. The Mandya did not provide self-link page results through the Google search engine.

# 6.4 External Links of State Universities in Karnataka

- A: Number of Web Pages in the Websites.
- D: Number of External Pages in the Websites.

	Tuble - 4. External Emiks of St	No. of	No. of	Simple	
S. N.	Name of the University	Web	external	WIF	Rank
		Pages (A)	pages	( <b>D</b> /A)	
1	Davangere University	720	264	0.366	1
	KSGH Music and Performing Arts	342	98	0.286	2
2	University	542	90	0.280	Δ
	Karnataka Veterinary, Animal &	747	193	0.258	3
3	Fisheries Science University				
4	Maharani Cluster University	41	10	0.243	4
5	Karnataka Folklore University	478	73	0.152	5
6	Karanataka University	4620	336	0.072	6
7	Rani Channamma University	1,910	84	0.043	7
8	Karnataka State Open University	1010	40	0.039	8
9	Bangalore University	2900	73	0.025	9
10	Mangalore University	12,900	246	0.019	10
	University of Agricultural Sciences,	2200	40	0.017	11
11	Banglore	2390	42	0.017	11
12	Karnataka State Law University	496	8	0.016	12
13	Karnataka Sanskrit University	12800	176	0.013	13
14	Akkamahadevi women's University	456	6	0.009	14
15	Kuvempu University	3040	29	0.009	14
16	Tumkur University	6,100	49	0.008	15
	Vesveswaraiah Technological	2 12 000	2400	0.007	10
17	University, Belagavi	3,42,000	2480	0.007	16
18	Kannada University	828	5	0.006	17
19	Bengaluru Central University	1860	10	0.005	18
20	Bengaluru North University	1210	5	0.004	19
	University of Agricultural Sciences,	41 100	107	0.004	10
21	Raichur	41,100	187	0.004	19
22	Gulbarga University	635	2	0.003	20
	Karnataka State Rural Develop. and	619	2	0.003	20
23	Panchayat Raj University	019	Ĺ	0.003	20

Table - 4: External Links of Stage Universities in Karnataka

24	Mysore University	62,200	244	0.003	20
25	Bengaluru Dr. B. R. Ambedkar School of Economics University	396	1	0.002	21
26	National Law School of India University	9,730	18	0.001	22
27	University of Agricultural Sciences, Dharwad	71,400	87	0.001	22
28	University of Horticultural Sciences, Bagalkot	4180	7	0.001	22
29	Rajiv Gandhi University of Health Science	39,800	27	0.0006	23
30	Mandya University	16000	0		24
31	Vijayanagara Sri Krishnadevaraya University	7130	0		24

It is evident from table 4 that Davangere University, Davanagere occupies first place with the number of web pages 720, external pages 264, and 0.366 external WIF. KSGH Music and Performing Arts University, Mysuru, occupies second place with the number of web pages 342, external pages 98, and 0.286 external WIF. Karnataka Veterinary, Animal & Fisheries Science University, Bidar occupies third place with the number of web pages 747, external pages 193, and 0.258 external WIF. Akkamahadevi women's University, Bijapur and Kuvempu University, Shivamogga, have secured 14th position with the 0.009 external Web Impact Factor. Rajiv Gandhi University of Health Science, Bengaluru occupied 29th position with 39800 web pages, 27 external pages, and 0.0006 external WIF. The Mandya University and Vijayanagara Sri Krishnadevaraya University did not provide results through the Google Search Engine.

# 7. Major Findings of the Study

- Most State Universities (74.19%) have .ac.in the domain name for their websites. .ac.in is specially used for academic purposes in India.
- Very few state universities (3.32) have .org, .gov.in, and .nic.in the domain name for their university websites.
- Bengaluru Dr. B. R. Ambedkar School of Economics University has occupied first place out of 31 Universities in Link Pages with simple Web Impact Factor 15,656.
- Mandya University, Mandya have gained 31st place in Link Pages with Simple Web Impact Factor 0.043
- Karnataka Veterinary, Animal & Fisheries Science University has secured 1st place in self-link pages with Simple Web Impact Factor 0.258
- Rajiv Gandhi University of Health Science, Bengaluru gained 25th place in self-link pages with Simple Web Impact Factor 0.0006
- Davangere University, Davangere occupied 1st place in external link pages with Simple Web Impact Factor 0.366
- Rajiv Gandhi University of Health Science, Bengaluru has got 23rd place in external link pages with Simple Web Impact Factor 0.0006
- Mandya University, Mandya, 26th place in self-link pages, 24th in external link pages, Vijayanagara Sri Krishnadevaraya University 24th place in external link pages, due to the website information have not been able to access the search engines (Google, Yahoo!, bing).

### 8. Recommendations

- Mandya University, Mandya gained 31st place in link pages with SWIF 0.043. Hence, it is recommended that the university improve its link pages for its website.
- Rajiv Gandhi University of Health Science, Bengaluru, has secured 25th place in self-link pages with SWIF 0.0006. Hence, it is recommended to improve their self-link pages for their website.
- Mandya University has occupied 26th place in the self-link pages because the search engine is not providing information for our logical expressions.
- Hence, it is recommended that the University rectify the problematic Rajiv Gandhi University of Health Science; Bengaluru has got 23rd place in external link pages with SWIF 0.0006. Hence it is recommended to improve their external link pages and to share their information with others.
- Mandya University and Vijayanagara Sri Krishnadevaraya University has occupied 24th place on the external pages because the search engine is not providing information for our logical expressions.
- More than10 universities have less than 1000 web pages; it shows very little content on their websites. So we recommended improving the number of web pages with valuable content.

# 9. Conclusion

The present study gives exploratory website information about 31 state universities of Karnataka, and it gives a fair idea about the information provided by them. This study provides information regarding the number of web pages, link pages, self-link pages, external link pages, and the different domain names of their websites. This study will help the universities to improve their in all aspects so the content will be accessible by their users to get fast and reliable information from their website.

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S.N.	University Name	URL's
1	Akkamahadevi women's University	http://ka.kswu.ac.in
2	Bangalore University	https://bangaloreuniversity.ac.in
3	Bengaluru Central University	https://bcu.ac.in
4	Bengaluru Dr. B. R. Ambedkar School of	https://base.ac.in
	Economics University	
5	Bengaluru North University	https://eng.bnu.ac.in
6	Davangere University	http://davangereuniversity.ac.in
7	Gulbarga University	https://gug.ac.in
8	Kannada University	http://www.kannadauniversity.org
9	Karnataka State Law University	https://kslu.karnataka.gov.in
10	Karnataka State Open University	https://www.ksoumysuru.ac.in
11	Karanataka University	https://www.kud.ac.in
12	Karnataka Veterinary, Animal & Fisheries	https://www.kvafsu.edu.in
	Science University	
13	Karnataka Folklore University	https://www.janapadauniversity.ac.in
14	Karnataka Sanskrit University	http://ksu.ac.in
15	Karnataka State Rural Development and	https://ksrdpru.ac.in
	Panchayat Raj University	
16	KSGH Music and Performing Arts	https://www.musicuniversity.ac.in
	University	
17	Kuvempu University	http://www.kuvempu.ac.in
18	Maharani Cluster University	https://gfgc.kar.nic.in/macw
19	Mandya University	https://www.mandyauniversity.ac.in
20	Mangalore University	https://mangaloreuniversity.ac.in
21	Mysore University	https://uni-mysore.ac.in
22	National Law School of India University	https://www.nls.ac.in
23	Rajiv Gandhi University of Health Science	https://www.rguhs.ac.in
24	Rani Channamma University	https://rcub.ac.in
25	Tumkur University	http://tumkuruniversity.ac.in
26	University of Agricultural Sciences.	https://www.uasbangalore.edu.in
27	University of Agricultural Sciences, Dharwad	http://www.uasd.edu
28	University of Agricultural Sciences, Raichur	https://www.uasraichur.edu.in
29	University of Horticultural Sciences,	https://www.uhsbagalkot.edu.in
	Bagalkot	
30	Vesveswaraiah Technological University,	https://vtu.ac.in
	Belagavi	
31	Vijayanagara Sri Krishnadevaraya University	http://vskub.ac.in

Appendix - 1

