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WEBOMETRIC ANALYSIS OF STATE UNIVERSITIES IN ANDHRA PRADESH: A STUDY

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Abstract

This Study examines and explores through a webometric analysis of the websites of 33 state universities in Andhra Pradesh. Identify the domain systems of the websites; collection of statistics about WebPages (WIF), Link impact report etc. The webometric data have been collected through Google search engine and the network diagram drawn using Webometric Analyst and pajek Tools. Result revealed that SriVenkatewara Veterinary University – Tirupati gained1st rank in link pages, Jawaharlal Nehru Technological University, Hyderabad got 1strank in Self-linking Pages, Acharya Nagarjuna University, Guntur occupied 1st in External link Pages.

INTRODUCTION

The science of webometrics (also cybermetrics) tries to measure the World Wide Web to get knowledge about the number of hyperlinks, structure of the World Wide Web and usage patterns. The term webometrics was first coined in print by an article by Almind and Ingwersen (1997)1, which identified the web as an important source for measuring documents and information. According to Björneborn and Ingwersen (2004)2, the definition of 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 provide information on the departments, resources and services, faculty details, students, alumni, and different types of committees, affiliated colleges, services, academic information, examination details etc. The websites are playing major role in the universities in providing the information It is very difficult to get complete and reliable data for quantitative rankling. An attempt has been made to take all the state universities in Andhra Pradesh with help of appropriate webometric indicators.

1. REVIEW OF LITERATURE:

A review of the literature reveals that there is a large amount of literature available on the webometric study.
Almind and Ingwersen1 (1997) their aim is to introduce and argue for the interesting idea that it is possible to utilize informatric methods on the World Wide Web (WWW). While informetrics is the research into information in a broad sense and not only limited to scientific communication, the approach taken here will be called Webometrics, Which covers research of all network-based communication.

Ingwersen and Bjorneborn2 (2001) in this study attempts to point to selected area of webometric research that demonstrate interesting progress and space for development as well as to same currently less promising areas. Problems with measuring Web Impact Factors (Web-IF) are discussed. Park and Thalwall3 (2003) study is an extensive review of the two analytical methods, and reflection on their application. Hyperlink Network Analysis (HNA) casts hyperlinks between websites or web pages as social and communicational ties, applying standard techniques from social networks analysis to this new data source. Sangamitra and Supratima (2004)4 the present research is to evaluate the accessibility and lineament of website through statistical analysis of the site log files using any available software and to identify some effective measure of usage and do prediction of future usage using linear trend line approach.Silvan (2004)5conducted a study to describes the methods that were used to gather co-link data and to prepare co-link indicators of 862 natural science and engineering group web sites at 50 major European universities. Bjorneborn and Ingwerson (2004)6 the study defines webometrics within the framework of informetric studies and bibliometrics, as belonging to library and information science, and as associated with cybermetrics as a generic subfield. They developed a consistent and detailed link typology and terminology and made explicit the distinction among different web node levels when using the proposed conceptual framework. Norusi (2005)7 in his study it investigates the Web Impact Factors (WIFs) for Iranian universities and introduces a new system of measurement. Counts of links to the web sites of Iranian universities were calculated from the output of AltaVista search engine. Bridsall (2007)8 in his study discussions on web 2.0 development represent a significant development in the continuing interaction of technological developments and communications rights. The social movement for a right to communicate and the discourse surrounding web 2.0 development are compared to demonstrate how web 2.0 is a manifestation of an ongoing interaction between this human rights social movement and communication technology. Thelwall (2009)9 this study webometrics is concerned with measuring aspects of the web: web sites, web pages, parts of web pages, words in web pages, hyperlinks, web search engine results. Nageswar Rao and others (2009)10this paper aims to study and analyze the various aspects of the credibility of autonomous college websites in Tamil Nadu. The analysis of the data represents the extent and the level of credibility possessed by the autonomous colleges in Tamil Nadu. Thelwall(2010)11 this study uses citation analysis and a survey of webometricians to assess the extent to which webometrics has found applications outside of its parent discipline. Jalal and others (2010)12this study investigates the effectiveness and relevance of web impact factor for Indian Universities' websites. Review web impact factor as to how this link based metrics is developed and is applied. Reports a case study on universities in west Bengal SocSciBot 3.0 is used to generate link data in order to develop/form micro-link topology under study. Thalwall and others (2010)13this study he discusses the possibilities for policy – relevant webometrics for individual scientific fields in order to suggest how and when webometric analyses can support science policy decision about individual fields. Ratha and Others (2012)14 they presented an analysis of design and structure of the library websites of IITs. Maharana and others (2012)15 they examined and explored the web impact factor through a webometric study of the Indian Institute of Technology (IITs) of India. Identifies the domain systems of the websites; analyzes the number of web pages and link pages, and calculation of simple web impact factor of all IITs.

2. NEED AND SCOPE:

The study was conducted to know about the websites of the universities, web structure, length of the websites of the universities, and links of the universities in Andhra Pradesh. Hence, there is a need to study on webometric analysis of universities in Andhra Pradesh. An attempt has been made to investigate on the location of common web objects or links in the home university web sites of Andhra Pradesh and to find out the pattern followed in majority of the universities.

3. OBJECTIVES:

To find the motive of links between the university website in Andhra Pradesh;
To identify and analyze websites of Universities in Andhra Pradesh;
To identify the domain systems of University websites in Andhra Pradesh as per the WebPages;
To calculate the number of web pages, number of link pages, number of self-link pages and external link

pages of university websites in Andhra Pradesh and rank them;
To find out the link patters among the Universities in Andhra Pradesh; and
To generate micro-link topology among the similar kind of universities using appropriate webometric tools.

4. METHODOLOGY:

Webometric studies used advances query options of commercial search engines to obtain hyperlink counts. Primarily there are few search engines (Google, Bing, and Yahoo!) which reports number of web pages or links against carefully designed queries related to webometric study. Google search engine is representing references selected to collect data for the calculation of Web Impact Factor at different levels as per the objective of this study. Data collection method extensively utilizes the special keywords SITE and LINKSITE for collecting number of Web Pages, link pages, self-link pages, and external link pages respectively from Google search engine database. 33 state Universities have been in Andhra Pradesh out of 43, which are recognized by University Grant Commission, Delhi. The data required for the study collected from the UGC website in the month of September' 2012.

4.1. Use of Appropriate Query Syntax:

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

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

All the domain names verified to check whether Google, Bing, and Yahoo! Support to the site name. Finally we have chosen Google search engine for the study. For each of this domain a search was carried out to determine the total number of web pages self-links, and external links using the above mentioned queries. For network diagram we have chosen Webometric16 Analyst and pajek17 Tools.

5. DATA ANALYSIS:

State Universities of Andhra Pradesh have been ranking by their simple web impact factor.

5.1. Domains of State Universities in India:

Table 1 shows the classification of State Universities by their domain name, further, it shows that eight types of domain extensions were observed in the present study of the state Universities in Andhra Pradesh.

Table 1
Domain of State Universities in Andhra Pradesh

Sl. No.	Domain Names	No. of Universities	Percentage (%)
1.	.ac.in	15	45.45%
2.	.org	5	15.15%
3.	.edu.in	3	9.09%
4.	.in	3	9.09%
5.	.net	2	6.06%
6.	.info	2	6.06%
7.	.ap.nic.in	2	6.06%
8.	.com	1	3.03%
		33	100%

It is observed from the Table-1 the most of the university websites have .ac.in (45.45%) followed by .org (15.15%), .edu.in (9.09%), .in (9.09%), .net (6.06%), .info (6.06%), .ap.nic.in (6.06%) extension and whereas only one website has .com (3.03%) extension respectively.

5.2. Links Pages of State Universities in Andhra Pradesh:

The simple WIF as shown in Table 2 illustrates the rank distribution of the state universities websites of the Andhra Pradesh, according to their simple Web Impact Factor. Dividing the number of link pages (B) by number of Web Pages (A), the number of simple WIF (B/A) of each university is found.

A: No. of Web Pages where as
B: No of Links Pages to the Website

Table 2
Link pages of State Universities

Sl. No.	Name of the University	No. of Web Pages (A)	No. of Links Pages (B)	Simple WIF (B/A)	Rank by Simple WIF
1.	Sri Venkatewara Veterinary University – Tirupati	80	11,300,000	1,42,250	1
2.	Jawaharlal Nehru Architecture and Fine Arts - Hyderabad	4	3,16,000	79000	2
3.	Sri Venkateswara Vedic University – Tirupati	27	1,340,000	49629.62	3
4.	Palamuru University, Mahaboobnagar	62	2,310,000	37258.00	4
5.	Dr. B.R. Ambedkar University, Srikakulam	570	1,380,000	24210.52	5
6.	Mahathma Gandhi University, Nalgonda	44	2,67,000	6068	6
7.	Jawaharlal Nehru Technollogical University, Hyderabad	101	2,23,000	2207.92	7
8.	Sri Krisnadevaraya University, Anantapur	453	2,59,000	571.74	8
9.	Satavahana University, Karimnagar	193	69,700	361.13	9
10.	Yogivemana University, Kadapa	277	97,400	351.62	10
11.	Dravidian University, Kuppam	813	2,07,000	254.61	11
12.	Potti Sriramulu Telugu University, Hyderabad	381	81,400	213.64	12
13.	Krishna University, Machilipatnam	461	92,600	200.86	13
14.	Adi Kavi Nannaya Univeristy, Rajamandri	119	17,600	147.89	14
15.	Sri Venkateswara University, Tirupati	1080	1,25,000	115.74	15

16.	Sri Padmavathi Mahila Vishwa Vidyalayam, Tirupati	61	6,410	105.08	16
17.	National Academy of Legal Studies and Research University, Hyderabad	501	52,500	104.79	17
18.	Acharya N.G.Ranga Agricultural University, Hyderabad	1250	1,22,000	97.6	18
19.	Rajiv Gandhi Univrsity of Knowledged Technologies, Hyderabad	1480	1,37,000	92.56	19
20.	Kakatiya University, Warangal	1140	98,400	86.31	20
21.	Vikram Simhapuri University, Nellore	257	20,100	78.21	21
22.	Telangana University, Nizamabad	439	16,900	38.49	22
23.	Rayalaseema University, Kurnool	172	5960	34.65	23
24.	Sri Venkateswara Institute of Medical Sciences, Tirupati	115	3730	32.43	24
25.	Osmania University, Hyderabad	8920	2,69,000	30.15	25
26.	Andhra University, Visakapatnam	4980	1,44,000	28.91	26
27.	A.P.University of Law	143	2710	18.95	27
28.	Dr. B.R.Ambedkar Open University, Hyderabad	588	10,300	17.51	28
29.	Jawaharlal Nehru Technological Univeristy, Kakinada	53,500	1,99,000	3.71	29
30.	Acharya Nagarjuna University, Guntur	40,600	99,400	2.44	30
31.	Y.S.R Horticultural University, Venkataramannagudem	229	491	2.144	31
32.	Jawaharlal Nehru Technological University, Anantapur	2,71,000	1,38,000	0.50	32
33.	AP University of Health Sciences				

Sources: Google search engine

It is evident from the Table-2 the Sri Venkatewara Veterinary University, Tirupati occupies first place with number of link pages 11,300,000, number of web pages 80 and simple Web Impact Factor 1, 42,250. Second place goes to Jawaharlal Nehru Architecture and Fine Arts, Hyderabad with number of link pages 3,16,000, number of web pages 4 and the simple Web Impact Factor 79000 And Third place goes to Sri Venkateswara Vedic University, Tirupati with number of link pages 1,340,000, number of web pages 27 and simple Web Impact Factor 49629.62. Though the Jawaharlal Nehru Technological University, Anantapur (2, 71,000) has more number of web pages than the above three websites, but it occupies 32nd place. Because the number of link pages is very less compared to it web pages. Finally the A. P. University of Health Sciences did not able to show their result through the Google search engine.

5.3. Self-links (Hyperlinks) of State Universities in Andhra Pradesh:

A Table 3 show self-links of the state universities in Andhra Pradesh.

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

Table 3
Self-links of State Universities in Andhra Pradesh

Sl. No.	Name of the University	No. of Web Pages (A)	No. of Self links Pages (C)	Simple WIF (C/A)	Rank by Simple WIF
1.	Jawaharlal Nehru Technological University, Hyderabad	101	1,56,000	1544.55	1
2.	Sri Venkateswara Veterinary University, Tirupati	80	55,400	692.5	2
3.	Telangana University, Nizamabad	439	2,53,000	576.30	3
4.	Mahatma Gandhi University, Nalgonda	44	24,000	545.45	4
5.	Palamuru University, Mahaboob Nagar	62	62,060	100.96	5
6.	Satavahana University, Karimnagar	193	8,253	42.74	6
7.	Osmania University, Hyderabad	8920	2,26,000	25.33	7
8.	Andhra University, Visakhapatnam	4980	1,24,000	24.89	8
9.	Acharya Nagarjuna University, Guntur	40,600	1,010,000	24.87	9
10.	Acharya N.G.Ranga Agricultural University, Hyderabad	1250	29,500	23.6	10
11.	Rayalaseema University, Kurnool	172	3,380	19.65	11
12	National Academy of Legal Studies and Research University, Hyderabad	501	9800	19.56	12
13	Potti Sriramulu Telugu University, Hyderabad	381	5,700	14.96	13
14	Dravidian University, Kuppam	813	7950	9.77	14
15.	Dr. B.R.Ambedkar Open University, Hyderabad	580	4,700	7.99	15
16.	Vikram Simhapuri University, Nellore	257	1660	6.459	16
17.	Kakatiya University, Warangal	1140	9922	0.808	17
18.	Sri Krishnadevaraya University, Anantapur	453	274	0.604	18
19.	Jawaharlal Nehru Architecture and Fine Arts, Hyderabad	4	1	0.25	19
20.	Rajiv Gandhi University of Knowledged University, Hyderabad	1480	335	0.226	20
21.	Sri Venkateswara Vedic University, Tirupati	27	4	0.148	21
22.	Sri Padmavathi Mahila Viswa Vidyalayam, Tirupati	61	9	0.147	22
23.	Sri Venkateswara Institute of Medical Sciences, Tiruapati	115	9	0.078	23
24.	Yogi Vemana University, Kadapa	277	21	0.075	24
25.	Adi Kavi Nannaya University, Rajamandri	119	7	0.058	25
26.	A.P.University of Law, Visakhapatnam	143	7	0.048	26
27.	Sri Venkateswara University, Tiruapati	1080	48	0.044	27
28.	Dr. B.R.Ambedkar University, Srikakulam	570	20	0.035	28
29.	Dr. Y.S.R Horti Cultural University,	229	8	0.034	29
30.	Krishna University, Machilipatnam	461	9	0.019	30
31.	Jawaharlal Nehru Technological University, Kakinada	53,500	595	0.011	31
32.	Jawaharlal Nehru Technological University, Anantapur	2,71,000	2,340	0.008	32
33.	A.P.University of Health Sciences, Vijayawada				

Sources: Google search engine

It is evident from the Table-3 the Jawaharlal Nehru Technological University, Hyderabad occupies first place with the number of self-link pages1, 56,000, number of web pages 101 and self-link WIF 1544.55. Sri Venkateswara Veterinary University, Tirupati occupies the send place with number of self-link pages 55,400, number of web pages 80 and self-link WIF 692.5. Telangana University, Nizamabad occupies third place with number of self-link pages 2, 53,000, number of web pages 439, and self-link WIF 576.30. And Jawaharlal Nehru Technological University, Anantapur has occupies 32nd position in the list with number of self-link pages 2,340 number of 2, 71,000 and the self-link WIF 0.008. The A. P. University of Health Sciences did not provide results through the Google search engine

5.4. External Links of State Universities in Andhra Pradesh:

A Table 4 shows External links of the state universities in Andhra Pradesh.

A: Number of Web Pages in the Websites.

D: Number of External Pages in the Websites.

Table 4
External Links of Stage Universities in Andhra Pradesh:

Sl. No.	Name of the University	No. of Web Pages (A)	No. of External Pages (D)	Simple WIF (D/A)	Rank by Simple WIF
1.	Acharya Nagarjuna University, Guntur	40,600	1,12,000	2.758	1
2.	Potti Sriraumulu Telugu University, Hyderabad	381	384	1.007	2
3.	Sri Venkateswara Institute of Medical Sciences, Tirupati	115	81	0.704	3
4.	Vikram Simhapuri University, Nellore	257	177	0.688	4
5.	Telangana University, Nizamabad	439	269	0.612	5
6.	Dr. Y.S.R Horti Cultural University,	229	119	0.519	6
7.	Jawaharlal Nehru Technological University, Hyderabad	101	50	0.495	7
8.	Rayalaseema University, Kurnool	172	82	0.476	8
9.	Adi Kavi Nannaya University, Rajamandri	119	53	0.445	9
10	Dravidian University, Kuppam	813	350	0.430	10
11.	A.P.University of Law, Visakhapatnam	143	61	0.426	11
12.	Dr. B.R.Ambedkar Open University, Hyderabad	588	250	0.425	12
13.	Palamuru University, Mahaboobnagar	62	25	0.403	13
14.	Sri Krishnadevaraya University, Anatapur	453	168	0.370	14
15.	Sri Venkateswara Vedic University, Tiruapati	27	10	0.370	14
16.	National Academy of Legal Studies and Research University, Hyderabad	501	183	0.365	15
17.	Acharya N.G.Ranga Agricultural University, Hyderabad	1250	442	0.353`	16
18.	Andhra University, Visakhapatnam	4980	1550	0.311	17
19.	Satavahana University, Kurnool	193	54	0.279	18
20.	Kakatiya University, Warangal	1140	310	2027	19

21.	Jawaharlal Nehru Architecture and Fine Arts, Hyderabad	4	1	0.25	20
22.	Sri Venkateswara veterinary University, Tiruapati	80	19	0.237	21
23.	Osmania University, Hyderabad	8920	1530	0.171	22
24.	Rajiv Gandhi University of Knowledge Technologies, Hyderabad	1480	247	0.166	23
25.	Mahatma Gandhi University, Nalgonda	44	7	0.159	24
26.	Dr. B.R.Ambedkar University, Srikakulam	570	85	0.149	25
27.	Yogi Vemana University, Kadapa	277	36	0.129	26
28.	Sri Venkateswara University, Tirupati	1080	120	0.111	27
29.	Krishna University, Machilipatnam	460	47	0.101	28
30.	Sri Padmavathi Mahila Viswa Vidyalayam, Tiruapati	61	5	0.08	29
31.	Jawaharlal Nehru Technological University, Anantapur	2,71,000	2,580	0.009	30
32.	Jawaharlal Nehru Technological University, Kakinada	53,500	231	0.004	31
33.	A.P.University of Health Sciences, Vijayawada				32

*Sources: Google search engine*

It is evident from the Table-4 the Acharya Nagarjuna University, Guntur occupies the first place with the (40,600) number of web pages, (1, 12,000) external pages and 2.758 external WIF. Potti Sriraumulu Telugu University, Hyderabad occupies send place with the (381) number of web pages, (384) external pages and 1.007 external WIF. Sri Venkateswara Institute of Medical Sciences, Tirupati occupies third place with the (115) number of web pages,(81) external pages and 0.704 external WIF. Sri Krishnadevaraya University, Anatapur and Sri Venkateswara Vedic University, Tiruapati have secured 14th position with the (0.370) external Web Impact Factor. Jawaharlal Nehru Technological University, Kakinada occupied 31st position with the (53,500) number of web pages, (231) external pages and 0.004 external WIF. The A. P. University of Health Sciences did not provide results through the Google search engine.

5.5 Model University Network in Andhra Pradesh

A network diagram is a network drawn to illustrate the strength of interlinking between a set of URLs and/or web sites. In the diagram, a circle is drawn to represent each URL or web site and arrows are drawn from circle A to circle B if there is a URL citation in web site/page A to web site/page B. Overall, the diagram illustrates the pattern of interconnectivity between the collection of sites/URLs.

Figure 1
Model University Network in Andhra Pradesh
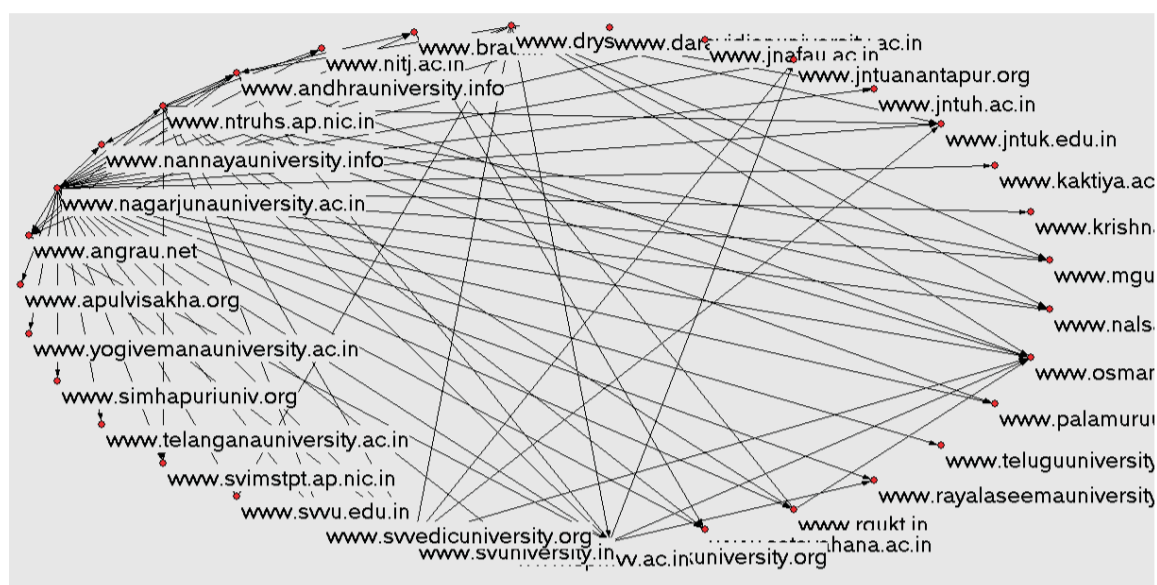
Network topology-URL Citation-links between the state Universities in AP.
Tools: Webometric Analyst with Pajek

6. FINDINGS:

Majority of State Universities (45.45%) are having .ac.in domain name for their websites. .ac.in is specially using for academic purpose in India.

Least of the state universities (3.03%) is having .com domain name for their university websites. .com is a commercial purpose domain.

Sri Venkateswara Veterinary University, Tirupati have occupied first place out of 33 Universities in Link Pages with simple Web Impact Factor 42,250.

Jawaharlal Nehru Technological University, Anantapur have gained 32nd place in Link Pages with Simple Web Impact Factor 0.50.

Jawaharlal Nehru Technological University, Hyderabad has secured 1st place in self-link pages with Simple Web Impact Factor 1544.55.

Jawaharlal Nehru Technological University, Anantapur gained 32nd place in self-link pages with Simple Web Impact Factor 0.008.

Acharya Nagarjuna University Gunture occupied 1st place in external link pages with sSimple Web Impact Factor 2.758.

Jawaharlal Nehru Technological University, Kakinada has got 32nd place in external link pages with Simple Web Impact Factor 0.004

Andhra Pradesh University of Health Sciences, Vijayawada has occupies 33rd place in all link pages, self-link pages, and external link pages, due to the website information have not been able to access the search engines (Google, Yahoo!, bing).

7. RECOMMENDATIONS:

Jawaharlal Nehru Technological University, Anantapur gained 32nd place in link pages with SWIF 0.50. Hence, it is recommended to the university to improve their link pages for their website.

Again Jawaharlal Nehru Technological University, Anantapur has secured 32nd place in self-link pages with SWIF 0.008. Hence, it is recommended to improve their self-link pages for their website.

Jawaharlal Nehru Technological University, Kakinada has got 32nd place in external link pages with SWIF 0.004. Hence it is recommended to improve their external link pages and to share their

information to others.

Some of the universities are having less than 100 web pages; it shows very less content of their websites. It is advised to the universities to improving websites by providing the number of web pages with valuable content.

It is observed from the study NTR Health Science University, Jawaharlal Nehru Technological University of Kakinada and Ananthapur are in the least rank in maintaining website with full fledged information. As these are professional universities, have to maintain full-fledged information in their websites for serving other users relating to the different courses offered by them and other information relating academic required by them.

There is an urgent need for networking of all universities in Andhra Pradesh. The Government of Andhra Pradesh should take necessity steps for networking of university websites for getting information of all universities from any one of universities.

8. CONCLUSION:

The present study it gives exploratory website information about 33 state universities of Andhra Pradesh. From this study we are able to provide information regarding number of web pages, link pages, self link pages, external link pages and also with the different domain names of their websites. This study will help to the universities to improve their websites in all aspects so the content will be accessible by their users to get fast and reliable information from the website.

7. REFERENCES:

1. Almin and Ingwersen. Information Analyses on the Wide Web: Methodological Approaches to 'Webometrics'. Journal of Documentation 53(4), 1997; pp. 404-426.

2. Ingwersen and Bjorneborn. Perspective of Webometics. Scientometics. 50(1),2001; pp. 65-82.

3. Park and Thalwall. Hyperlink Analyses of the World Wide Web: A review. Journal of Computer-mediated Communication. 8(4), 2003; pp. 1-35.

4. Sangamitra and Supratima.Quantifying Web-site visits using Web statistics: an extended cybermetrics study. Online Information Review. 28(3), 2004;pp.191 – 199.

5. Silvan.Co-Link Web Indicators of the European Research Area Web Indicators for Scientific, Technological and Innovation Research. 2(1), 2004; pp.1-56.

6. Bjorneborn and Ingwerson. Toward a Basic Framework for Webometrics. Journal of the American Society for Information Science and Technology. 55(4), 2004; pp. 1216-1227. Available at http://www.condoc.csic.es/cybermetrics/

7. Norusi.Web Impact Factors for Iranian Universities.   Webology. 2(1),2005; Available at: http://www.webology.org/2005/v2n1/a11.html

8. Birdsall, William F.“Web 2.0 as a Social Movement,” Webology. Online, 4(2), (2007); pp. 1 – 12.

9. Thelwall. Introduction to Webometrics: Quantitative Web Research for the Social SciencesSynthesis Lectures on Information Concepts, Retrieval, and Services.Online Information Review.(2009); pp.1-116.

10. Nagewar Rao and others. Web Credibility of Autonomous College Websites in Tamil Nadu: A Study. Library Herald. 47(3), 2009; pp.194-216.

11. Thelwall.Webometrics: emergent or doomed?Information Research.15(4); 713. 2010; pp. 1-18.Available at http://InformationR.net/ir/15-4/colis713

12. Jalal and others Web Impact Factor and link analysis of selected Indian University. Annals of Library and Information Studies. 57(2), 2010; pp.109-121.

13. Thalwall and others. Policy – relevant webometric for individual scientific fields. Journal of the American Society for Information Science and Technology. 61(7), 2010; pp. 1464 – 1475.

14. Ratha and others.Webometric Study of IIT Libraries Websites. DESIDOC Journal of Library and Information Technology, 32(3), 2012; pp.249-254.

15. Maharana and others.Web Impact Factor (WIF) and Link Analysis of Indian Institute of Technologies (IITs): A webometric Study. Library Philosophy and Practice (e-journal), 2012; paper 789. http://digitalcommons.unl.edu/libphilprac/786

16.http://lexiurl.wlv.ac.uk/searcher/index.htmlWebometric Analyst 2.0
http://vlado.fmf.uni-lj.si/pub/networks/pajek/

Appendix:

Sl. No	Name of the University	URL's
1.	A.P. University of Law, Palace Layout, Pedawaltair,Visakhapatnam – 530 017 (A. P)	**www.apulvisakha.org**
2.	Acharya N.G.Ranga Agricultural University, Hyderabad-500 030.	**www.angrau.net**
3.	Acharya Nagarjuna University, Nagarjuna Nagar, Guntur-522 510.	**www.nagarjunauniversity.ac.in**
4.	Adikavi Nannaya University, Jaya Krishnapuram, Rajahmundry – 533 105, Andhra Pradesh.*	**www.nannayauniversity.info**
5.	Andhra Pradesh University of Health Sciences,Vijayawada-520 008 *	**www.ntruhs.ap.nic.in**
6.	Andhra University, Visakhapatnam-530 003. 1926	**www.andhrauniversity.info**
7.	Dr. B.R. Ambedkar Open University, Jubilee Hills, Hyderabad-500 033	www.braou.ac.in
8.	Dr. B.R. Ambedkar University, Etcherla – 532 410 Srikakulam.*	**www.brau.in**
9.	Dr. Y.S.R. Horticultural University, Venkataramannagudem	**www.drysrhu.edu.in**
10.	Dravidian University, Kuppam-517 425.	**www.dravidianuniversity.ac.in**
11.	Jawaharlal Nehru Architecture and Fine Arts University,Mahaveer Marg, Masab Tank, Hyderabad – 500 028 *	**www.jnafau.ac.in**
12.	Jawaharlal Nehru Technological University, Anantpur,	**www.jntuanantapur.org**
13.	Jawaharlal Nehru Technological University, Hyderabad-500 072.	**www.jntuh.ac.in**
14.	Jawaharlal Nehru Technological University, Kakinada	**www.jntuk.edu.in**
15.	Kakatiya University, Warangal-506 009.	www.kuwarangal.com
16.	Krishna University, Andhra Jateeya Kalasala, Campus,Rajupeta, Machllipatanam – 521 001.*	**www.krishnauniversity.net**
17.	Mahatma Gandhi Univesity, Panagal, Nalgonda – 500 803,Andhra Pradesh*(Former name of the University was Nalgonda University)	**www.mguniversity.ac.in**
18.	National Academy of Legal Studies & Research University,Hyderabad-500 027.	**www.nalsar.ac.in**
19.	Osmania University, Hyderabad-500 007.	**www.osmania.ac.in**
20	Palamuru University, Ayyappa Complex, Opp. Police Head Quarters, Mahabubnagar – 509 001AP*	**www.palamuruuniversity.ac.in**
21.	Potti Sreeramulu Telugu University, Hyderabad-500 004.	**www.teluguuniversity.ac.in**
22.	Rayalaseema University, Kurnool – 518 002*	**www.rayalaseemauniversity.ac.in**
23	Rajiv Gandhi University of knowledge Technologies, Ground Floor, Vindhya C4 Building, IIIT-H Campus, Gachibowli, Hyderabad – 500 032, Andhra Pradesh*	**www.rgukt.in**
24.	Satavahana University, Jyothinagar, Karimnagar – 505 001*	**www.satavahana.ac.in**
25.	Sri Krishnadevaraya University, Anantapur-515 003.	**www.skuniversity.org**
26.	Sri Padmavati Mahila Vishwavidyalayam,Tirupati-517 502.	**www.spmvv.ac.in**
27.	Sri Venkateswara University, Tirupati-517 507.	**www.svuniversity.in**
28.	Sri Venkateswara Vedic University, Purandaradas Complex, Prakasam Road, Tirupati.*	**www.svvedicuniversity.org**