

ZIBELINE INTERNATIONAL  
PUBLISHERS

ISSN: 2521-0874 (Print)

ISSN: 2521-0505 (Online)

CODEN: AIMCCO

Acta Informatica Malaysia (AIM)

DOI : <http://doi.org/10.26480/aim.01.2019.07.12>

## REVIEW ARTICLE

# WEBOMETRICS ANALYSIS OF IRANIAN UNIVERSITIES ABOUT MEDICAL SCIENCES' WEBSITES BETWEEN SEPTEMBER 2016 AND MARCH 2017

Meisam Dastani<sup>1,2</sup>, Somayeh Panahi<sup>3</sup>, Masoumeh Sattari<sup>4</sup><sup>1</sup>PhD student in Knowledge and Information Science, Payame noor university, Tehran, Iran.<sup>2</sup>Information Technology Expert, vice chancellor for research and technology, Gonabad University of Medical Sciences, Gonabad, Iran.<sup>3</sup>MA in Knowledge and Information Science, University of Qom, Qom, Iran.<sup>4</sup>M.Sc. Medical Library and Information Science, Librarian Research Center of Psychiatry and Behavioral Sciences, Tabriz University of Medical Sciences, Tabriz, Iran.\*Corresponding Author E-mail: [meisam.dastani@gmail.com](mailto:meisam.dastani@gmail.com)

This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

## ARTICLE DETAILS

## ABSTRACT

## Article History:

Received 27 November 2018

Accepted 28 December 2018

Available online 8 February 2019

This study aimed to analyze the websites' ranks on Iranian Medical Sciences Universities in the period of 11 September 2016 to 1 March 2017. It was performed on Webometrics method which contains 41 Websites of Iranian Medical Sciences Universities. For instance, Moz, Google, Google Scholar and so on. University of Shiraz's website topped the table. Tehran, Shahid Beheshti and Bandar Abbas Universities' websites followed Shiraz in order. Meanwhile, Kerman University of Medical Sciences, North Khorasan, Bushehr and Urmia experienced the highest increase on Home contents, scientific resources, input links and rich files. First-rank universities, as well as universities with the highest growth, all own what a good website should have the basic contents and beyond. In one word, the results of this study showed that except a limited number of universities possess high-quality website, others have weak effect.

## KEYWORDS

Webometrics, Visibility, Medical Universities, Iran.

## 1. INTRODUCTION

Deeper development of technologies is unstoppable, so does its wide-size impact. That is why we said it is necessary and urgent to figure out how computer influences human's life and how to improve its efficiency consciously. Rare and latest academic results can be gained on internet, but it takes pains. Fortunately, the conception of open access to richful research keeps developing. In the light of network can connect science and science well. Based on a study, we are bound to learn the searching skills, as well as to know the greatest websites in their own field, in medical area[1].

According to research, webometrics is a collective name used for three types of web-based measurement research, namely, assessing link counts for academic citations, investigating the reliability and coverage of search engines and to study the change in web content or individual collections of web pages [2]. The advent and popularity of the World Wide Web (WWW) has given birth to a new discipline Webometrics. Webometrics, is the quantitative study of Web-related phenomena, emerging from the realization that methods originally designed for Bibliometrics analysis of scientific journal article citation patterns could be applied to the web, with commercial search engines providing the raw data [3].

Webmetrics ('web metrics, web analytics') record and analyze visitor traffic to and through a web site. They can be used to estimate whether or not users' goals are being achieved; to support usability studies and web design; and to provide feedback on web site use to developers, managers, and other stakeholders. According to a scholar, despite similarities in nomenclature, web metrics are distinct from Webometrics (the analysis of the structure and links of the World Wide Web) [4]. At the heart of Webometrics studies is the information provided by the large-scale search engines, such as Yahoo (more suitable) or Google, about the structure of the weblike total number of pages in a web site and the total number of back-links to the web site etc.

A widespread method of studying the academic web space is to rank the sites/domains of academic organizations; it started with the works of the Cybermetrics Lab group headed by Isidro Aguillo in 2010. As a result, a constantly updated Webometrics ranking of universities, research centers, clinics, business schools, and open archives was formed (The Webometrics Ranking of World Universities project: [www.Webometrics.info](http://www.Webometrics.info)). In our opinion, the ranking reflects sufficiently adequately the efficiency of the scientific activity of an organization, which is confirmed by comparison with authoritative ratings of higher educational institutions [5].

Later on, the researchers of Cybermetric laboratory in Spanish National Research Council (CSIC) started their efforts to design, develop and compile Web indicators for analysis of academic web sites and to measure Web activity and visibility. Their efforts ultimately lead to build up a global university's ranking list. Accordingly, since 2004, a scholar and his colleagues in Cybermetric laboratory calculated the world Webometrics ranking of universities using other parameters than WIF [6]. Due to the dynamic feature of the world Web, rankings are changeable during the time. As a group of scholars suggested with the rapid development of the Internet, there is a need for assessing the public Web visibility in terms of its implications for university management, planning, and governance [7]. Today, the impact of universities web sites is increasingly essential. Studying the success of university websites is significant, also evaluating and ranking the performance of universities to find how they speak their ideas in the virtual web environment. In fact, ranking based on Webometrics criteria for academic sites can be an indicator for assessing the performance of academic sites and also is a way to make researches more visible on the Web. Because the following academic publications can't lose these results' helps. Therefore, this research is based on Webometrics indications and using the formulas mentioned in the research methodology section, to study and analyze the websites of Iranian medical universities at a six-month interval (from 11 September 2016 to 1 March 2017).

## 2. LITERATURE REVIEW

A previous scholar made an analysis of Web presence of the universities in Latin America using Cybermetrics indicators [8]. The authors have studied the Brazilian Universities to know web presence through web visibility and domain size. The result shows that there is a tremendous increase in the commitment of Brazilian universities to the web and tried to visualize the web presence by using the co-link maps of 167 Brazilian universities. Other scholar carried out a survey on the Webometrics analysis of Iranian universities of medical sciences [9]. The study revealed that Iranian universities of medical sciences did not have much impact on the web and were not well-known internationally. The major reason relies on linguistic barriers. Some of them also suffer from technical problems in their web design.

Recent scholars conducted a Webometrics study on fifteen Private Engineering College Websites in Tamil Nadu to calculate the web impact factor [10]. This study reveals that private engineering colleges in Tamil Nadu did not have much impact on the web. A scholar conducted a Webometrics study on Universities in Bangladesh [11]. This study reveals that some universities in Bangladesh have higher number of web pages, but their link pages are fewer and websites fall behind in their web impact factor. The investigator had given some suggestions to improve the WIF of the 10 university websites in Bangladesh.

A scholar completed the research entitled "How to improve Webometrics ranks of Iranian medical universities" [12]. They discussed the importance of university websites in introducing their faculties, departments, courses, etc on the internet. Researchers suggested that structural and content improvements of the websites are inevitable for the rise in their ranks. A group of scholars has been surveyed Ibadan website ranking based on rich files, Google scholars and presence [13]. The results of this study showed that situation of Ibadan university website was poor. Thus, some strategies such as Digitization of scientific articles, creating weblog for faculty and put university link on it for improving index of this university. A group of researchers conducted a study on Webometrics analysis of the 33 State Universities in Andhra Pradesh using Google search engine, Webometrics Analyst and Page Tools [14]. The study shows that Sri Venkateswar Veterinary University, Tirupati gained 1st rank in link pages, Jawaharlal Nehru Technological University, Hyderabad got 1 strank in Self-linking Pages, Acharya Nagarjuna University, Guntur occupied 12 1st in External link Pages.

A researcher conducted a study on the Webometrics analysis of Iranian medical universities according to visibility, size and rich files [15]. This study indicated that the use of rich files can give a better and more reliable view of university rankings. The paper would provide information to eliminate the barriers to improve web sites of medical universities in Iran. A recent scholar carried out a survey on The Webometrics Status of Isfahan University of Medical Sciences, Iran [16]. This result shows, from July 2012 to January 2013, IUMS Webometrics rank improved by 707, 5 and 2 at international, national and ministerial levels, respectively. Moreover, the rank of IUMS for openness rose from 4477 to 193 during the mentioned period. In excellence, the university rank did not change sensibly. In the same period, the rank in presence shifted from 1137 to 1091. Meanwhile, growth in website impact was negative as the university impact rank declined from 3369 to 3393. This is potentially due to the content language (Farsi) which is an important barrier to easy retrieval of information by non-Farsi speakers. However, the scientific content and SEO (Search Engine Optimization) standards of the website need serious improvement.

A group of researchers carried out a survey on The Increasing Trend in Global Ranking of Websites of Iranian Medical Universities during January 2012-2015 [17]. The results showed that the highest rank was in Jan 2014. Tehran University of Medical Sciences ranked the first in all periods. The highest ratings were about impact factor in universities of medical sciences reflecting the low level of this index in university websites. Also, the least ranking was observed in type 1 universities. Despite the criticisms and weaknesses of these Webometrics criteria, they are critical to this equation and should be checked for authenticity and suitability of goals. Therefore, localizing these criteria by the advantages model, ranking systems features, continuous development and medical

universities evaluation based on these indicators pro-vide new opportunities for the development of the country especially through online media.

Other researchers have been surveyed Websites of 10 Central Universities in North East India are examined [18]. The study calculates the link pages, the number of web pages, and analysis the Web Impact Factor of Central universities in North East India and the result found that the Tezpur University occupies first place with the highest Domain & Page Authority, External Equity-Passing Links and Total External links. While, Mizoram University leads with the highest Internal Equity-Passing Links, Total Equity-Passing Links, Total Internal links and Total links. After analyzing the websites of these 10 Central Universities of North East India, the result reveals that Web Impact Factor of Mizoram University (MZU) occupies at top position with 83.54 SWIF, 52.73 IWIF and 30.80 EWIF among the other Central Universities Websites in North East India.

## 3. RESEARCH METHODOLOGY

The 48 websites in the Iranian Universities of Medical Sciences were evaluated between from 11September, 2016 to 1March, 2017. To extract the number of indexed web pages (size) I have used the Google search engine by the below formula: Site: sitename.domain. In the same time, to mine numbers of files in the Google search engine sitename was used. Domainfiletype: pdf, and to extract the number of scientific resources retrieved have used the Google Scholar search engine and formula Site: sitename.domain. To calculate and obtain the number of links received.

Open Site Explorer is provided by Mozscape, SEOmoz's index of the links on the internet. Beyond the standard link data, such as linking URLs, linking domains, and anchor text, Mozscape includes unique metrics that provide insight into the authority and trust of pages and domains. The major search engines, Google, Yahoo, and Bing build similar indexes to help evaluate the importance and relevance of content on the web. Data comes from the World Wide Web itself. Indexing large amounts of data is allowing relevancy research and finds continued activities in competitive community driven for general purpose to web scale search engine [19]. Number of pages recovered from four engines: Google, Yahoo, Live Search and Exalead. The total number of unique external links received (inlinks) by a site can only be confidently obtained from MOZ Engine Search.

After evaluation of their relevance to academic and publication activities and considering the volume of the different file formats, the following were selected: Adobe Acrobat (.pdf), Adobe PostScript (.ps), Microsoft Word (.doc) and Microsoft Power point (.ppt). These data were extracted using Google. Google Scholar provides the number of papers and citations for each academic domain. These results from the Scholar database represent papers, reports and other academic items (<http://www.Webometrics.info/methodology.html>). These four ranks were combined according to a formula where each one has a different weight: The Webometrics Analysis can be performed with number of inlinks, outlinks, number of Web Pages and number of rich files. Webometrics Rank (WR) = 4\*Rank V + 2\*Rank S + 1\*Rank R + 1\*Rank Sc, Where V = Visibility, S = Size, R = Rich Files and Sc = Google Scholar [20,21].

## 4. FINDINGS

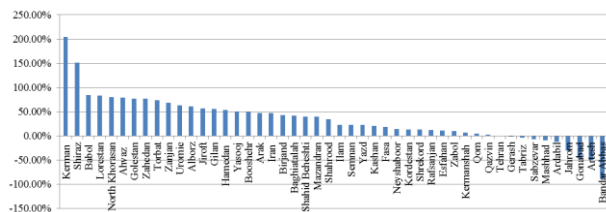
Findings of this study contain score, rank, and the rate of growth of the website of Iranian medical universities are presented in Table 1 and Figure 1. Table1 shows that the websites of universities in Shiraz, Tehran and Bandar Abbas had the highest percentage of Webometrics in September 2017. Besides, the websites of Shiraz, Shahid Beheshti and Tehran also had the highest score in March of 2017. What's more, regarding the performance of websites, Figure1 shows that Kerman University of Medical Sciences had the highest growth rate (204.24%), followed by Shiraz University of Medical Sciences with 150.68% and the Babol University of Medical Sciences with the highest growth rate of 84.08% , and Bandar Abbas Medical Sciences Universities with a rate of 89.21%, Artesh University of Medical Sciences of 50.99%, and Gonabad University of Medical Sciences, 45.90, have had the highest negative growth rates.

**Table 1:** The Webometrics rank of the website of Iranian Medical Sciences Universities in September and March (as of March)

University	Website	Score in September	Score in March	rank in September	rank in March	Growth rate
Kerman	kmu.ac.ir	370486	1127180	19	5	204.24%

Shiraz	sums.ac.ir	8521192	21360643	1	1	150.68%
Babol	mubabol.ac.ir	583420	1073941	14	8	84.08%
Lorestan	lums.ac.ir	160945	295741	39	31	83.75%
North Khorasan	nkums.ac.ir	189307	340696	37	29	79.97%
Ahvaz	ajums.ac.ir	641211	1150055	11	4	79.36%
Golestan	goums.ac.ir	282090	498747	27	18	76.80%
Zahedan	zaums.ac.ir	123611	218455	40	39	76.73%
Torbat	thums.ac.ir	16463	28560	48	47	73.48%
Zanjan	zums.ac.ir	274565	462153	28	21	68.32%
Uromie	umsu.ac.ir	519014	848668	17	11	63.52%
Alborz	abzums.ac.ir	226957	364945	34	26	60.80%
Jiroft	jmu.ac.ir	29529	46269	46	46	56.69%
Gilan	gums.ac.ir	283479	440842	26	24	55.51%
Hamedan	umsha.ac.ir	622624	955995	12	10	53.54%
Yasooj	yums.ac.ir	295912	446017	25	22	50.73%
Booshehr	bpums.ac.ir	342242	510780	21	17	49.25%
Arak	arakmu.ac.ir	300346	443070	23	23	47.52%
Iran	iums.ac.ir	728238	1070750	10	9	47.03%
Birjand	bums.ac.ir	537941	768921	16	13	42.94%
Baghiatalah	bmsu.ac.ir	199822	282521	36	32	41.39%
ShahidBeheshti	sbmu.ac.ir	2114285	2956997	4	2	39.86%
Mazandran	mazums.ac.ir	250771	349448	30	28	39.35%
Shahrood	shmu.ac.ir	66875	90065	44	43	34.68%
Illam	medilam.ac.ir	187990	230921	38	36	22.84%
Semnan	semums.ac.ir	261195	320476	29	30	22.70%
Yazd	ssu.ac.ir	385567	472413	18	20	22.52%
Kashan	kaums.ac.ir	229664	278126	33	34	21.10%
Fasa	fums.ac.ir	100999	120119	42	42	18.93%
Neyshaboor	nums.ac.ir	306669	351565	22	27	14.64%
Kordestan	muk.ac.ir	248760	281443	31	33	13.14%
Shrekord	skums.ac.ir	117725	132931	41	41	12.92%
Rafsanjan	rums.ac.ir	222049	248009	35	35	11.69%
Esfahan	mui.ac.ir	975438	1083688	7	7	11.10%
Zabol	zbmu.ac.ir	65517	72319	45	44	10.38%
Kermanshah	kums.ac.ir	746789	794847	9	12	6.44%
Qom	muq.ac.ir	363763	380692	20	25	4.65%
Qazvin	qums.ac.ir	567327	583732	15	15	2.89%
Tehran	tums.ac.ir	2962269	2937293	2	3	-0.84%
Gerash	gerums.ac.ir	17680	17313	47	48	-2.08%

Tabriz	tbzmed.ac.ir	1131485	1090891	5	6	-3.59%
Sabzevar	medsab.ac.ir	245244	227922	32	38	-7.06%
Mashhad	mums.ac.ir	829985	753063	8	14	-9.27%
Ardabil	arums.ac.ir	599763	526711	13	16	-12.18%
Jahrom	jums.ac.ir	87407	60630	43	45	-30.63%
Gonabad	gmu.ac.ir	300175	162397	24	40	-45.90%
Artesh	ajaums.ac.ir	981085	480838	6	19	-50.99%
Bandar Abbas	hums.ac.ir	2136649	230589	3	37	-89.21%



**Figure 1:** The growth rate of the website of Iranian medical universities in the over six-month period

Table 2 shows the growth of each of the Webometrics indicators such as page size, scientific resources indexed in Google Scholar, input links and rich files in the next half year 2016. According to the findings, highest grow is related to the index of page size with 226.35%, the index of scientific resources indexed in North Khorasan University of Medical Sciences with 723.90%, the index of links to the sites of Bushehr University of Medical Sciences with 197.28%, and the rich files indexed by the University of Medical Sciences with the rate of %483.11.

**Table 2:** The growth rate of the website of Iranian medical sciences universities in each of the Webometrics indices in the 6-month period, respectively, in letters

University	Website	size	Scholar	Visibility	Reach files
Ahvaz	ajums.ac.ir	81.79%	30.72%	67.29%	17.82%
Alborz	abzums.ac.ir	62.62%	17.95%	39.06%	21.39%
Arak	arakmu.ac.ir	50.72%	4.18%	-3.28%	39.61%
Ardebil	arums.ac.ir	-12.46%	2.43%	-24.02%	19.94%
Artesh	ajaums.ac.ir	-54.64%	2.12%	18.58%	2.88%
Babol	mubabol.ac.ir	85.96%	0.00%	-1.73%	44.98%
Bandar abbas	hums.ac.ir	-8.39%	-2.91%	-94.63%	32.48%
Baqiatalah	bmsu.ac.ir	66.24%	-52.76%	-49.10%	0.43%
Birjand	bums.ac.ir	44.96%	1.36%	-10.44%	6.37%
Booshehr	bpums.ac.ir	44.52%	7.63%	197.28%	12.84%
Esfahan	mui.ac.ir	14.12%	-9.18%	-41.75%	24.00%
Fasa	fums.ac.ir	20.92%	5.83%	-1.28%	34.60%
Gerash	gerums.ac.ir	5.65%	0.00%	120.00%	-50.43%
Gilan	gums.ac.ir	62.20%	6.47%	-15.99%	18.37%
Golestan	goums.ac.ir	81.40%	1.73%	-11.65%	82.14%
Gonabad	gmu.ac.ir	-47.36%	6.56%	-37.41%	2.57%
Hamedan	umsha.ac.ir	55.22%	10.94%	-7.01%	60.22%
Ilam	medilam.ac.ir	23.69%	7.87%	13.29%	17.42%
Iran	iums.ac.ir	51.67%	-25.84%	-4.50%	41.00%
Jahrom	jums.ac.ir	-46.21%	-17.99%	128.11%	-41.68%
Jiroft	jmu.ac.ir	53.72%	44.44%	66.47%	103.73%
Kashan	kaums.ac.ir	22.55%	-4.17%	9.55%	14.30%
Kerman	kmu.ac.ir	226.35%	111.76%	-15.71%	13.87%
Kermanshah	kums.ac.ir	2.62%	6.52%	36.22%	71.25%
Kordestan	muk.ac.ir	12.93%	64.00%	1.82%	58.43%
Lorestan	lums.ac.ir	90.07%	550.89%	2.65%	17.94%
Mashhad	mums.ac.ir	-4.11%	7.30%	-36.02%	-40.78%
Mazandaran	mazums.ac.ir	50.49%	41.67%	-26.80%	29.74%

Neyashaboor	nums.ac.ir	15.13%	59.81%	-68.26%	23.34%
North Khorasan	nkums.ac.ir	107.27%	723.90%	-38.93%	61.77%
Qazvin	qums.ac.ir	3.38%	22.51%	-32.20%	16.77%
Qom	muq.ac.ir	4.17%	161.85%	-1.27%	27.96%
Rafsanjan	rums.ac.ir	10.58%	0.63%	26.41%	40.99%
Sabzevar	medsab.ac.ir	-6.96%	0.00%	-16.06%	12.55%
Semnan	semums.ac.ir	22.05%	22.50%	-8.85%	62.39%
ShahidBeheshti	sbmu.ac.ir	50.30%	151.59%	-21.38%	34.68%
Shahrekord	skums.ac.ir	12.98%	5.14%	11.02%	19.50%
Shahrood	shmu.ac.ir	33.22%	35.68%	45.71%	30.00%
Shiraz	sums.ac.ir	-9.54%	21.84%	172.73%	45.05%
Tabriz	tbzmed.ac.ir	-8.12%	-7.23%	51.85%	43.57%
Tehran	tums.ac.ir	-4.00%	1.42%	15.04%	31.00%
TorbatHeydarie	thums.ac.ir	91.99%	-1.10%	-55.56%	-71.62%
Uromie	umsu.ac.ir	55.14%	60.80%	12.72%	483.11%
Yasooj	yums.ac.ir	53.96%	-11.80%	-6.45%	17.69%
Yazd	ssu.ac.ir	28.83%	9.18%	-40.93%	13.37%
Zabol	zbmu.ac.ir	7.29%	-37.84%	49.80%	-16.94%
Zahedan	zaums.ac.ir	81.17%	7.14%	39.84%	18.42%
Zanjan	zums.ac.ir	73.39%	6.22%	-0.79%	48.33%

## 5. CONCLUSION

Active presence on the Web and publication of research results are considered as performance indicator of universities and research institutes in the assessment of development. Websites must be evaluated regularly in terms of their importance, applicability, and success in achieving the goals. On the one hand, Webometrics assessment of websites of universities and research institutes has the advantage to put the spotlight on the current situation and the performance of universities in relation to the web environment. On the other hand, leaders of these organizations try to provide necessary helps to their institutions for the active presence on the web according to international standards. Therefore, the universities should care about periodic evaluations. The present study indicates a general scheme of the Webometrics status of Iran's medical sciences universities and its growth rate in 11September and 1March of 2016. Among the major factors to determine the success of each university is the amount of visibility of the website and web pages have been affiliated to that university by web searchers. It means that, getting more external links is the most important objective for attaining high ranking due to improve chances for visibility of website's resources among others. As well as, it can be considered as an indication of the impact of the document and its producer's. The results of this study indicate that some of the websites of medical universities of the country that were ranked high in the ranking of the month of September were significantly downgraded in March. Also, some websites of universities such as Kerman University of Medical Sciences have had grew well compared to their previous rank. Also, some universities have had a positive growth rate on any of the indexes than their previous ones, but others have not only had no growth but had a negative growth. This means removing indexed pages, indexed scientific resources, input links and rich files indexed in search engines. Indexed pages and indexed links in Google Search and Google Scholar search engines have a significant role in increasing the overall ranking of the website due to the impact of the coefficient that have on Webometrics Rank. Previous studies have shown volatility and decreased Web site rankings. Due to the results and reduction of website ranking, it is recommended to use the principles of Search Engine Optimization (SEO) for web sites. Finally, in order to increase the visibility of university website, it is recommended to provide the citing potentiality through the search engines. Further, accessibility and abundance of Rich Text files will assist the website visibility. In addition, to increase the traffic ranking and visibility, Persian texts need to be translated into English and one person from each educational department or group to be assigned as an advisor or supervisor in order to update the page and/or promote the quality as well as the quantity of the relevant home page.

## REFERENCES

- [1] Kosyakov, D.V., Gus'kov, A.E., Bykhovtsev, E.S. 2016. Russia's academic institutes as mirrored by webometrics. Herald of the Russian Academy of Sciences, 86(6), 490-499.
- [2] Thelwall, Michael. 2009. Introduction to webometrics: Quantitative web research for the social sciences. Synthesis lectures on information concepts, retrieval, and services, 1(1), 1-116.
- [3] Thelwall, M., Vaughan, L., Björneborn, L. 2005. Webometrics. ARIST, 39(1), 81-135.
- [4] Björneborn, L., Ingwersen, P. 2004. Toward a basic framework for webometrics. Journal of the Association for Information Science and Technology, 55(14), 1216-1227 .
- [5] Aguillo, I.F., Bar-Ilan, J., Levene, M., Ortega, J.L. 2010. Comparing university rankings. Scientometrics, 85(1), 243-256.
- [6] Pavlina, K. 2012. Webometric ranking of European universities. Procedia-Social and Behavioral Sciences, 46, 3788-3792.
- [7] Lee, M.S., Park, H.W. 2012. Exploring the web visibility of world-class universities. Scientometrics, 90(1), 201-218.
- [8] Aguillo, I.F., Ortega, J.L., Granadino, B. 2006. Brazil academic webuniverse revisited: A cybermetric analysis.
- [9] Aminpour, F. 2011. How to Improve Webometric Ranks of Iranian Medical Universities. Journal of Isfahan medical school, 29, 127.
- [10] Thanuskodi, S. 2011. Webometric analysis of private engineering college websites in Tamil Nadu. Journal of communication, 2(1), 73-81.
- [11] Islam, A. 2011. Webometrics study of Universities in Bangladesh. Annals of Library and Information Studies, 58(4), 307-318.
- [12] Aminpour, F., Kabiri, P., Otroj, Z., Keshkar, A. 2009. Webometric analysis of Iranian universities of medical sciences. Scientometrics, 80(1), 253-264 .
- [13] Osunade, O., Ogundele, C.O. 2012. Valuation of the university of Ibadan website using webometric ranking parametars. Transnational Journal of Science and Technology, 2(3), 66-78.
- [14] Madhuri, A.J., Babu, K.S., Ramesh, P.A. 2013. Webometric Analysis of State Universities in Andhra Pradesh: A study. International Journal of Library and Information Studies, 3(1), 65-78.

[15] Tafaraji, R., Tahamtan, I., Roudbari, M., Sedghi, S. 2014. Webometric analysis of Iranian medical universities according to visibility, size and rich

[16] Geetha, S., Sathiyakumari, K. 2012. Backlink Analysis Using Mozrank Algorithm of Blogs. International Journal of Computer Science, 1, 9.

[17] Ghorbani, Nahid Ramezan, Fakour, Yousef, Nojoumi, Seyed Ali. 2017. The Increasing Trend in Global Ranking of Websites of Iranian Medical Universities during January 2012-2015. Iranian Journal of Public Health, 46(8), 1095.

files. Webology, 11(1), 1.

[18] Shukla, S.H., Poluru, L. 2012. Webometric analysis and indicators of selected Indian state universities. Information Studies, 18(2), 79-104.

[19] Smith, A., Thelwall, M. 2002. Web impact factors for Australasian universities. Scientometrics, 54(3), 363-380.

[20] Verma, M.K., Brahma, K. 2017. Websites of Central Universities in North East India: A Webometric Analysis. DESIDOC Journal of Library & Information Technology, 37(3), 186.

