

**A CASE STUDY :**

# Analysis of websites of agricultural universities in Maharashtra : A web analytic study

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**SUMMARY :** The present study was undertaken to examine the content of SAU's websites in Maharashtra and compare with each other on the basis of ICAR guidelines and to appraise webometrics of the SAUs websites. The result of the study showed that general information such as about institute, how to reach, organizational setup, regional stations, AICRPs project were available on all SAU's websites. All SAU's websites have web objects about academic programme, admission, academic rules and regulation, student welfare. The study indicated that all the websites of SAU's have web objects about ongoing projects, research achievement and varieties developed. Agro advisory and help line available on every websites of SAU's. Information about books, periodicals, journals and online/offline literature database is provided in separate internal links of library webpage of all the SAUs. Web object about tenders and photo gallery and RTI act information were mentioned on the websites of all SAU's. Webometric analysis of SAUs websites showed that website of Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli and Mahatma Phule Krishi Vidyapeeth, Rahuri occupies 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> positions, respectively whereas Vasantnao Naik Marathwada Krishi Vidyapeeth, Parbhani holds 4<sup>th</sup> place among the SAUs. Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli and Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola shares 1<sup>st</sup> rank with 5 points out of 10 points whereas websites of Vasantnao Naik Marathwada Krishi Vidyapeeth, ranks 2<sup>nd</sup> with 4 points out of 10 points. It is indicated that size of home page of websites of Vasantnao Naik Marathwada Krishi Vidyapeeth, Parbhani, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli and Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola are 15.14 kb, 22.58 kb and 50.94 kb, respectively. The study helps the webmaster and the respective university to improve the usability of websites.

**KEY WORDS :**

Content analysis,

Websites, Webometrics analysis, SAU's

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## BACKGROUND AND OBJECTIVES

The website of any university is a platform to exhibit the educational facilities and information about the research and extension activities carried out by the university (Mangala, 2005). Today websites of any organization facilitates for the information dissemination and reveals the reputation of the organization since users are becoming net citizens. With globalization and compliance to the international regulations, agricultural researchers, policy makers, academician and farming community

need regularly updated information on various aspects of agriculture like technology, research, extension, weather, markets and other important innovations. The content of the websites target the user community and therefore, after ensuring that content is useful, well-written and in a format that is suitable for the web, it is important to ensure that the information is clearly organized in the form of different web objects (Chandran and Ramesh Babu, 2006). Prioritizing the content is one of the best ways to make sure the visitors are finding the information the site wants them to find, and that they want to find. Thus, web

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objects in the university websites is a key for the success of that website. Hence, a web analytic study was carried out to analyze the content available in the websites of Agricultural Universities in Maharashtra.

The report of first implementation support mission of National Agricultural Innovation Project (NAIP) has underscored the importance of web presence of ICAR institutes for effective knowledge management and exchange. Further, the mission intended NAIP should play a proactive role in enhancing the effectiveness of ICAR's web-based dissemination and publishing platform. This can be catalyzed through dynamic web presence of ICAR institutions. Keeping the above points in view, the NAIP has funded for establishing a consortium for AGROWEB – Digital Dissemination System for Indian Agricultural Research (ADDSIAR) at National Bureau of Plant Genetic Resources (NBPGR). AGROWEB team provided guidelines for ICAR websites (NBPGR, 2009). These guidelines are broad in nature and cover all information of what an ICAR institute website should contain.

Web objects is the elements on a web page which has a hypertext link to another place in the same or to an entirely different document such as text, graphics, URLs and scripts. Therefore, web objects can be thought of as individual entities that represent some functional unit on web page/site. The different web objects in the SAU's websites that were taken as per the guidelines of ICAR.

In the present study, an attempt has been made to examine the content of SAU's websites in Maharashtra and compare with each other on the basis of ICAR guidelines with the help of specific objectives; to assess the availability of web objects in the websites of SAUs in Maharashtra as per the ICAR guidelines and to appraise webometrics of the SAUs websites in state.

## RESOURCES AND METHODS

Websites of four SAUs in Maharashtra viz., Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola, Dr. Balasaheb Sawant Kokan Krishi Vidyapeeth, Dapoli and Mahatma Phule Krishi Vidyapeeth, Rahuri were taken for the present investigation, guidelines for uniformity in contents of websites of all the ICAR Institutes are provided by ADDSIAR. On the basis of these guidelines, web objects were studied for content analysis of SAU's websites. Webometrics analysis was also done which includes traffic rank, page rank and size of homepage of the SAU's websites. The information was collected by constantly visiting the websites of SAUs in the month of April, 2014.

Traffic rank of each website was done with the help of Alexa traffic rank. A ranking system set by alexa.com, subsidiary of amazon.com, basically audits and makes public the frequency of visits on various websites. The algorithm,

Alexa traffic ranking is calculated, based on the amount of traffic recorded from users, over a period of three months. This traffic is based on parameters such as reach and page views (Avangate.com, 2014). Page rank checker has been used to calculate the Google page rank for the university websites under study. Page rank is a link analysis algorithm, named after Larry page, used by the Google internet search engine that assigns a numerical weighting to each element of hyperlinked set of documents in the www, with purpose of 'measuring' its relative importance within the set (Thelwall, 2002). This algorithm may be applied to any collection of entities with reciprocal quotations and references. The page rank is derived from a theoretical probability value on a logarithmic scale like the Richter scale. The page rank of a particular page is roughly based upon the quantity of inbound links as well as the page rank of the pages providing the links. It is known that other factors, e.g. relevance of search words on the page and actual visits to the page, will also influence the page rank (Kothinayaki and Gopalkrishnan, 2011). Whereas online page size calculator provided by www.justsearchdigital.co.uk is used. This tool simply calculates the size of a web page of SAU's websites and estimated time it would take to download on a 56K modem. It's useful to keep file sizes as small as possible so that information can be loaded as fast as possible for visitors and search engine robots.

## OBSERVATIONS AND ANALYSIS

The results obtained from the present investigation are summarized below :

### Analysis of SAU's websites as per ICAR guidelines :

#### *Web objects about general information :*

The availability of web objects of general information about the university is presented in Table 1 and 2. It clearly shows that general information such as about institute, how to reach, organizational setup, regional stations, AICRPs project were available on all SAU's websites. Only Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola have provided information about cadre strength, staff and former directors, head of the institutes etc. Whereas information about divisions or units is available in Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli and Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola webpage.

#### **Web objects about education :**

The availability of web object about education on the websites of SAU's in Maharashtra is depicted in Table 3. These web objects are very useful for the students of the university and also for affiliated and constituent colleges of the universities for quick dissemination of information. All SAU's websites have web objects about academic programme,

admission, academic rules and regulation, student welfare. However, information about syllabus, fee structure, advisory and training services, academic calendar, holidays, semester dates, cultural events is not provided by any of the university. Web objects about examination results, sport facilities, scholarships, fellowships, awards has been noticed in websites of Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola, Mahatma Phule Krishi Vidyapeeth, Rahuri and Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli.

#### Web objects about research :

The availability of web object about research on the websites of SAU's in Maharashtra is presented in Table 4. It is illustrated that all the websites of SAU's have web objects

about ongoing projects, research achievement and varieties developed. Information about award winning projects, awards / honours, patents were made available on the websites of Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli and Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola. Information about newsletter is provided on website of Mahatma Phule Krishi Vidyapeeth, Rahuri while the information about journals / research papers provided on website of Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola.

#### Web objects about extension and publication :

Table 5 depicts that information about ATIC, KVK/DTC and farmer's rally has been observed on websites of all the

**Table 1 : Uniform resource locators (URLs) of websites of SAUs in Maharashtra**

Sr. No.	Name of the university	URL
1.	Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani	<a href="http://www.mkv.ac.in">www.mkv.ac.in</a>
2.	Dr Panjabrao Deshmukh Krishi Vidyapeeth, Akola	<a href="http://www.pdkv.ac.in">www.pdkv.ac.in</a>
3.	Dr. Balasaheb Sawant Kokan Krishi Vidyapeeth, Dapoli	<a href="http://www.dbskkv.org">www.dbskkv.org</a>
4.	Mahatma Phule Krishi Vidyapeeth, Rahuri	<a href="http://www.mpkv.ac.in">www.mpkv.ac.in</a>

**Table 2 : Web objects about general information (i.e. about us) on websites of SAUs**

Sr. No.	Particulars	VNMKV, Parbhani	Dr.BSKKV, Dapoli	Dr.PDKV, Akola	MPKV, Rahuri
1.	About institute	Y	Y	Y	Y
2.	How to reach	Y	Y	Y	Y
3.	Organizational setup	Y	Y	Y	Y
4.	Cadre strength	N	N	Y	N
5.	Divisions / units	N	Y	Y	N
6.	Regional stations	Y	Y	Y	Y
7.	About AICRPs	Y	Y	Y	Y
8.	Staff	N	N	Y	N
9.	Former directors/ Head of the division etc.	N	N	Y	N

**Table 3 : Web objects about education on the websites of SAUs**

Sr. No.	Particulars	VNMKV, Parbhani	Dr.BSKKV, Dapoli	Dr.PDKV, Akola	MPKV, Rahuri
1.	Academic programme	Y	Y	Y	Y
2.	Admission	Y	Y	Y	Y
3.	Syllabus	N	N	N	N
4.	Academic rules and regulation	Y	Y	Y	Y
5.	Fee structure	N	N	N	N
6.	Scholarships / fellowships / awards	N	Y	Y	Y
7.	Student welfare / support services	Y	Y	Y	Y
8.	Alumni	N	N	N	N
9.	Placement	N	Y	Y	N
10.	Advisory and training services	N	N	N	N
11.	Academic calendar, holidays, semester dates, cultural events etc.	N	N	N	N
12.	Student union activities	N	Y	N	N
13.	Sport facilities	N	Y	Y	Y
14.	Examination results	N	Y	Y	Y

SAU's. The information about extension bulletins / magazines, printed literature is not mentioned on any SAU's web sites whereas daily diary of the university is uploaded on the Vsantrao Naik Marathwada Krishi Vidyapeeth, Parbhani website.

#### Web objects about information for farmers :

The availability of information useful for the farmers is presented in Table 6. Agro advisory and help line available on every websites of SAU's. Technologies and suggestions for adverse conditions is available on Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani and Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola websites whereas success stories of the farmers were available on website of Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola only.

#### Web objects about library services :

Availability of information about library services on websites of respective SAU's is presented in Table 7. Information about books, periodicals, journals and online/offline literature database is provided in separate internal links of library webpage of the websites of all the SAUs.

#### Web objects about downloads and announcement :

Availability of web objects about downloads and announcement is presented in Table 8. Web object about tenders and photo gallery are mentioned on the websites of all the SAU's whereas newsletter and annual reports are available in downloadable form on websites of Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola and Mahatma Phule Krishi Vidyapeeth, Rahuri. In case of announcement,

**Table 4 : Web objects about research information on the websites of SAUs**

Sr. No.	Particulars	VNMKV, Parbhani	Dr.BSKKV, Dapoli	Dr.PDKV, Akola	MPKV, Rahuri
1.	Projects (ongoing projects)	Y	Y	Y	Y
2.	Research achievements	Y	Y	Y	Y
3.	Varieties developed / germplasm developed / identified details	Y	Y	Y	Y
4.	Collaborations	N	Y	Y	Y
5.	Recent publications				
	Annual reports	N	N	N	N
	Newsletter	N	N	N	Y
	Technical bulletins	N	N	N	N
	Books and manuals	N	N	N	N
	Research papers / journals	N	N	Y	N
6.	Award winning projects	N	Y	Y	N
7.	Awards / honours	N	Y	Y	N
8.	Patents (if any)	N	Y	Y	N

**Table 5 : Web objects about extension and publication on the websites of SAUs**

Sr. No.	Particulars	VNMKV, Parbhani	Dr.BSKKV, Dapoli	Dr.PDKV, Akola	MPKV, Rahuri
1.	ATIC	Y	Y	Y	Y
2.	KVK / DTC	Y	Y	Y	Y
3.	Farmer's rally, training etc extension activities	Y	Y	Y	Y
4.	Extension bulletins / magazines	N	N	N	N
5.	Printed literature	N	N	N	N
6.	Daily diary	Y	N	N	N

**Table 6: Web objects about information for farmers on the websites of SAUs**

Sr. No.	Particulars	VNMKV, Parbhani	Dr.BSKKV, Dapoli	Dr.PDKV, Akola	MPKV, Rahuri
1.	Technologies and suggestions for adverse conditions	Y	N	Y	N
2.	List of progressive farmers	N	N	N	N
3.	Success stories	N	N	Y	N
4.	Agricultural operations for the month	N	N	N	N
5.	Contingency plans	N	N	N	N
6.	Help line	Y	Y	Y	Y
7.	Agro advisory	Y	Y	Y	Y

information about employment opportunities and training / conference / meeting are available on the websites of all the SAU's. Information regarding press release (news) and farmer's / field day are available on websites of Vasantnaik Marathwada Krishi Vidyapeeth, Parbhani and Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola.

#### Web objects about university's facilities and services :

Table 9 shows information about University's facilities such as labs, guest house and seminar hall is mentioned on website of Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola

only whereas information about availability of seed / planting material is mentioned on websites of Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola and Mahatma Phule Krishi Vidyapeeth, Rahuri.

#### Web objects about other information :

Table 10 indicates other information on the websites of SAUs. Information about RTI act is mentioned on the websites of all SAU's whereas web sites of Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola and Mahatma Phule

**Table 7 : Web objects about library services provided by the university**

Sr. No.	Particulars	VNMKV, Parbhani	Dr.BSKKV, Dapoli	Dr.PDKV, Akola	MPKV, Rahuri
1.	About library	Y	Y	Y	Y
2.	Books	Y	Y	Y	Y
3.	Periodicals	Y	Y	Y	Y
4.	Journals	Y	Y	Y	Y
5.	Online / offline literature database	Y	Y	Y	Y

**Table 8 : Web objects about downloads and announcement in the websites of SAUs**

Sr. No.	Particulars	VNMKV, Parbhani	Dr.BSKKV, Dapoli	Dr.PDKV, Akola	MPKV, Rahuri
<b>Downloads</b>					
1.	Tenders	Y	Y	Y	Y
2.	Photo gallery	Y	N	Y	Y
3.	Documents (newsletter, annual reports, etc)	N	N	Y	Y
<b>Announcement</b>					
1.	Press release	Y	N	Y	N
2.	Employment opportunities	Y	Y	Y	Y
3.	Farmer's / field day	Y	N	Y	N
4.	Training / conference / meetings (brochures and application forms)	Y	Y	Y	Y

**Table 9 : Web objects about university's facilities and services on the websites of SAUs**

Sr. No.	Particulars	VNMKV, Parbhani	Dr.BSKKV, Dapoli	Dr.PDKV, Akola	MPKV, Rahuri
1.	Labs	N	N	Y	N
2.	Guest house	N	N	Y	N
3.	Seminar hall	N	N	Y	N
4.	Availability of seed/planting material	N	N	Y	Y

**Table 10 : Web objects about other information on the websites of SAUs**

Sr. No.	Particulars	VNMKV, Parbhani	Dr.BSKKV, Dapoli	Dr.PDKV, Akola	MPKV, Rahuri
1.	Calendar of events	N	N	Y	N
2.	Contact us	N	Y	Y	Y
3.	Feedback (through an email or other form)	N	Y	Y	N
4.	Search	N	N	Y	N
5.	Date of last update	N	N	N	N
6.	Visitors counter	N	Y	Y	Y
7.	Right to Information Act (RTI)	Y	Y	Y	Y
8.	Site map	N	Y	Y	Y
9.	Disclaimer/copyright/privacy statement	Y	N	Y	N

Krishi Vidyapeeth, Rahuri has web objects such as site map, contact us and visitors counter. Web objects about search and calendar of events are mentioned on websites of Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola only whereas web object about disclaimer are mentioned in websites of Vasantnao Naik Marathwada Krishi Vidyapeeth, Parbhani and Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola. Date of last update is not mentioned by any of the websites of SAU's in the state.

### Webometric analysis of SAUs in Maharashtra :

#### Alexa traffic ranks of SAUs websites :

The Alexa traffic ranks calculated for the SAU's websites are given in Table 11. The least the traffic ranks, the more heavily visited site. Accordingly, the university websites are ranked based on traffic rank. Website of Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, and Mahatma Phule Krishi Vidyapeeth, Rahuri occupies 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> positions, respectively whereas Vasantnao Naik Marathwada Krishi Vidyapeeth, Parbhani holds 4<sup>th</sup> place among the SAUs.

#### Google page ranks of SAUs websites :

Page rank of SAU's websites calculated according to Google page rank has been given in Table 12. Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli and Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola shares 1<sup>st</sup> rank with 5 points out of 10 points whereas websites of Vasantnao Naik

Marathwada Krishi Vidyapeeth ranks 2<sup>nd</sup> with 4 points out of 10 points. Google page rank of Mahatma Phule Krishi Vidyapeeth, Rahuri websites is not available at the time of investigation.

#### Size of home page of SAUs websites :

The size of home page of websites of SAU's in Maharashtra is mentioned in Table 13, it is indicated that size of home page of websites of Vasantnao Naik Marathwada Krishi Vidyapeeth, Parbhani, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli and Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola are 15.14kb, 22.58kb and 50.94kb, respectively whereas size of home page of Mahatma Phule Krishi Vidyapeeth, Rahuri is too heavy *i.e.* 73.61kb. As per ICAR guideline, the first page should not be more than 50kb. The size of home page of Mahatma Phule Krishi Vidyapeeth, Rahuri is too heavy, there is need to reduce the size of the home page, so that estimated time to download will be minimized. Similar work related to the present investigation was also carried out by Tan *et al.* (2008); Jasek (2008) and Ramesh Babu *et al.* (2009).

#### Conclusion :

The study helps the webmaster and the respective university to improvise the usability of websites. The present study has been exploratory and there is possibility to future research in this area. This study could be extended further by comparing SAU's within the country or by comparing institutions between countries.

**Table 11 : SAU's Websites and their Alexa traffic ranks**

Sr. No.	Name of the university	Alexa traffic rank (as on 25.04.2014)	Rank
1.	Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	1,650,477	I
2.	Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli	1,812,146	II
3.	Mahatma Phule Krishi Vidyapeeth, Rahuri	1,865,833	III
4.	Vasantnao Naik Marathwada Krishi Vidyapeeth, Parbhani	4,625,177	IV

**Table 12 : SAU's websites and their Google page ranks**

Sr. No.	Name of the university	Google page rank (out of 10)	Rank
1.	Vasantnao Naik Marathwada Krishi Vidyapeeth, Parbhani	4	II
2.	Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli	5	I
3.	Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	5	I
4.	Mahatma Phule Krishi Vidyapeeth, Rahuri	NA	NA

**Table 13 : Size of home page of web sites of SAU's**

Sr. No.	Name of the university	Size of home page of web sites (KB)	Time take 56K modem to download (Second)
1.	Vasantnao Naik Marathwada Krishi Vidyapeeth, Parbhani	15.14	2.2
2.	Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli	22.58	3.3
3.	Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola	50.94	7.5
4.	Mahatma Phule Krishi Vidyapeeth, Rahuri	73.61	10.8

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## REFERENCES

**Chandran, D. and Ramesh Babu, B.** (2006). Web resources: Access and evaluation. In : Library resources and services in the digital era, edited by B. Ramesh Babu, *et al.* SRM University, Kattangulathur, 2006. pp. 127- 35.

**Kothainayaki, S. and Gopalakrishnan, S.** (2011). Webometric analysis of Agricultural Universities in India. *Indian J. Sci. & Technol.*, **4**(3): 207-214.

**Mangala, Anil Hirwade** (2005). Websites of Indian universities: An evaluation. Himalaya Publishing House, Bombay (M.S.) INDIA

NBPGR (2009). Guidelines for uniformity in contents of websites of all the ICAR Institutes, AGROWEB Digital Dissemination System for Indian Agricultural Research (ADDSIAR). Director, National Bureau of Plant Genetic Resources, Pusa Campus, NEW DELHI (INDIA).

**Ramesh Babu, B., Naredra Kumar, A.M. and Gopalakrishnan, S.** (2009). Credibility of University Websites in Tamil Nadu,

*DESIDOC J. Lib. & Inf. Tech.*, **29** (3): 16-29.

**Sampath Kumar, B.T., Raj, K.R. Prithvi, Naik, A. Sadashiv and Reddy, Raghavendra** (2009). Content analysis of Indian institute of management library websites – An analytical study. Proceedings of 7<sup>th</sup> International Caliber-2009 held at Pondicherry University, Puducherry, 194-200pp.

**Tan, Wei-siog, Liu, Dahi and Ram, Bishu** (2008). Web evaluation : Jeuristic evaluation vs user testing Internat. *J. Indust. Ergon.*, **39** : 621-627.

**Thelwall, M.** (2002). Can Google's page rank be used to find the most important academic web pages? *J. Documenta.*, **58**: 563-574.

## ■ WEBLIOGRAPHY

**Avangate.com** (2014). How important is Alexa Ranking? <http://www.avangate.com/avangate-resources/article/alexa-ranking.htm> (Accessed on 5<sup>th</sup> April. 2014).

**Alexa.com** (2014). Alexa - Actionable Analytics for the Web. <http://www.alexa.com>. (Accessed on 6<sup>th</sup> April. 2014).

**Jasek, Chris** (2008). How to design library websites to maximize usability. <http://libraryconnect.elsevier.com/lcp/0502/lcp0502.pdf>.

**Justsearchdigital.co.uk** (2014). Page Size Calculator. <http://www.justsearchdigital.co.uk/tools/page.size>. (Accessed on 5<sup>th</sup> April 2014).

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