



Challenges facing Academic Libraries in Supporting Webometrics Ranking of Universities in Kenya

Wamahiga M. George¹, Kwanya Tom² and Ndegwa Lucy³

Library Department, Karatina University

Department of Information and Knowledge Management, the Technical University of Kenya²

Department of Psychology, Communication and Technology, Karatina University³

Email: [mwangiwmahiga2@gmail.com](mailto:mwangiwamahiga2@gmail.com) or gwamahiga@karu.ac.ke

ABSTRACT

Webometrics refers to the study of the quantitative aspects of the creation and usage of information resources, structures and technologies on the web drawing on bibliometric and infometric approaches. Across the world, libraries are committed to providing equal and rightful access to information. Therefore, libraries play a major role in influencing Webometrics ranking of universities across the world. Academic libraries influence Webometrics ranking through generation of scientific publications and other scholarly resources. Despite the remarkable success in Academic libraries' influence on Webometrics ranking, there are a number of setbacks facing these libraries in the effective facilitation of Webometrics ranking. This study examined the challenges facing academic libraries in supporting Webometrics ranking of universities in Kenya. The study adopted a mixed research design. The researcher collected data from a representative sample of 30 % of the entire target population in University of Nairobi, Chuka University and Kirinyaga University. The selection of the three universities was based on the most recent Webometrics rankings. The respondents were drawn from library, ICT and research Departments. Primary data was collected through semi-structured questionnaires and interviews. The data was analysed using descriptive statistics that is frequency distribution tables to compute mean. The study established that Bureaucratic and connectivity barriers as well as substandard research and inadequate knowledge on Webometrics are the key challenges facing Kenyan academic libraries in supporting improved webometrics ranking. The findings of this study may be used by other institutions of higher learning on the mechanisms they can adopt to increase the capacities of their academic libraries so as to improve the contribution of these libraries to Webometrics and consequently to the overall ranking of the individual universities nationally and internationally. The findings may also help policy makers and policy implementers to effectively understand the challenges facing academic libraries in supporting Webometrics ranking of universities in Kenya and hence improve opportunities for upscaling Webometrics in academic institutions.

Keywords: Webometrics, Academic Libraries, Ranking, Challenges, Kenya

INTRODUCTION

Webometrics ranking of universities was originally meant to support and encourage web publications. The chief objectives of Webometrics ranking of the world universities are open access initiatives and access to electronic scientific publications. Thus, it is the mandate of academic libraries to make available access to scientific publications, such as e-journals, repositories, and other scholarly resources. Due to this reason, Hertzler (2012) observes that the influence of the academic library to the web presentation of the university has grown. Because a great deal of content is deposited on library websites, the influence of academic



libraries on Webometrics ranking of universities is deemed to be great. Webometrics also has a significant impact on content recruitment in academic libraries. According to Hirsch (2012), Webometrics plays a crucial role in such key aspects of content recruitment in academic libraries as mediated depositing services, content harvesting, researcher bibliographies, usage information, and self-archiving policies. In terms of global and regional Webometrics ranking, the University of Nairobi is the main institution of higher learning that puts Kenya on the map. Further, an analysis of websites belonging to key local institutions of higher learning indicates that universities in Kenya, likewise to some African universities, have not adopted the Internet and its innovations to a significant level. Most of their websites are generally intermediate in their design. This is an indicator that their Webometrics dynamics have a long way to go if Kenyan institutions of higher learning were to compete with their international counterparts.

In reference to the 2018 Webometrics ranking of Kenyan universities, University of Nairobi tops the chart with a presence rank of 4 in Africa, impact rank of 726, openness rank of 985, and excellence rank of 1531. Chuka University is ranked 39th with a presence rank of 2756, impact rank of 15004, openness rank of 8791, and excellence rank of 5777. While Kirinyaga University is ranked 66th with a presence rank of 4441, impact rank of 21241, openness rank of 9595, and excellence rank of 5777 (Ranking Web of Universities, 2018).

Webometrics Challenges in Kenyan Universities

Webometrics ranking of universities in Kenya is growing steadily and it is even well ahead of previously revered universities in countries like Nigeria. However, Webometrics ranking in Kenyan universities is yet to match up to international competitiveness. There are various factors that continuously impede this progress. According to Mwanzu & Malesi (2015), these factors include: Inadequate attention paid to presentation of findings of research conducted by scholars in Kenyan universities in a format that is web-searchable, which results in publishing their work in low impact local journals that have no Internet links, and not being able to publish in electronic journals. Other factors, according to Rabai (2013) relate to poor presence of Kenyan universities on the Internet in a way that can be detected by the Cybermetric Research Group radar, outdated and insufficient content in Kenyan universities' websites.

Rationale of Study

Webometrics ranking has created an interactive world, which has fundamentally improved communication practices and research. These have continued with an unrelenting pace. Furthermore, the proficiency of libraries in scholarly communications and information management means that they are in a better place to help scholars realise the full benefits of a networked digital world. The introduction of Webometrics in libraries has brought about opportunities and challenges for researchers and libraries. The major opportunities include the fact that libraries influence Webometrics ranking by providing credible research materials, increasing visibility of research, making research materials and catalogues publicly available, motivating researchers, offering improved institutional information assets, improving coordination of research activities, and recruiting proactive information specialists (Onyancha & Ocholla, 2007). However, not much has been covered regarding the challenges facing academic libraries in Webometrics. This study therefore sought to shed more light on challenges facing academic libraries in supporting improved Webometrics ranking in Kenya.



The study sought to achieve the following objectives: analyse the challenges Kenyan academic libraries face in supporting improved Webometrics ranking of their parent institutions; and ways of dealing with the challenges Kenyan academic libraries face in supporting improved Webometrics ranking of their parent institutions.

Theoretical Framework

This study was based on the Information-Centered Research (ICR) Theory proposed by Thelwall and Wouters (2008). The Information-Centered Research theory argues that it is important for the information scientists to explore innovative web-based data sources in order to find out the disciplines in which the sources may be convenient as well as the ways and means that may be suitable for data management (Thelwall & Wouters, 2008). The authors of this study argues that progressively key strand of research in Webometrics ranking is the generation of metrics from the influence of academic articles via evidence from web searches for mentions of them. Thus, the Information-Centered Research Theory is relevant to this study because it postulates that librarians may possibly play a crucial role towards assisting information scientists for the web by guiding researchers to data sources and useful tools for their research needs. The primary argument of the Information-Centered Research Theory is that information scientists are involved in exploring various web-based data sources. With this understanding, the current study sought to examine challenges academic libraries face in supporting improved Webometrics ranking in Kenya.

LITERATURE REVIEW

New information technology tools have absolutely changed the role and responsibilities of academic libraries. There have been many studies on the Webometrics challenges faced by librarians. Ademodi and Adepoju (2009) investigated how computer skills among librarians affected Webometrics in academic libraries on Ondo and Ekiti states in Nigeria. The study established deficiency of computers and computer skills among professionals. The study recommended that more attention and funds be provided for training and procurement of ICT infrastructure in Nigerian university libraries. The study recommended that library administration should solicit for funding and assistance from foundations and foreign agencies who have interest in the cause. Over the years, foreign agencies have been found to possess solid managerial and administrative capacity coupled with the determination to spread informational transformation to emerging economies.

Adomi and Anie (2006) in a research on computer literacy skills of professionals in Nigerian university libraries and Webometrics ranking found out that the majority of the professionals did not possess high ability of computer skills and their use of computers and related technology was yet to mature. The authors recommended that library management and leaders should organise and offer in-house computer training programmes for librarians and make available enough computers in this regard.

Trushina (2010) explored the subject of the Internet and the correlation of Webometrics codes and their use in library practice. He posited that libraries are hinged on ethical principles more than any other institution since library services are basically human-oriented. Trushina (2010) emphasised that librarians are obligated to follow the intellectual freedom principle; they have a moral responsibility to the patrons.



In a review of library and Webometrics in developing countries, Baldwin (2012), concluded that Webometrics ranking in academic libraries in developing countries are negatively affected by lack of financial support by governments. According to Baldwin (2012), there is a significant challenge in adequately planning and financing the use of Webometrics in emerging economies. With cyclical donor funding and pressure to minimise administrative and management costs, it is often difficult for donors to properly plan and source financial and infrastructural investments in Webometrics ranking in these countries as a core capacity for informational programmes.

Rahman, Khatun and Islam (2008) reviewed library education in relation to Webometrics in Bangladesh. The authors found out that most of the institutions in Bangladesh lack well-equipped computer labs or adequate quantity of computers for students. As well there was no adequate number of classification and cataloguing tools (DDC, LC, Sears's list of subject headings) for practicals. Many institutions have either no library or insufficient collection of textbooks. The status of the professionals was also found to be very low with low pay scale and limited opportunities for promotion.

In Nepal, Siwakoti (2008) found that there was no government agency to control, monitor and evaluate Webometrics ranking in the academic libraries activities. The country was characterised by lack of awareness programmes, inadequate space, inadequate library materials budgetary constraints, lack of trained and skilled manpower and lack of appropriate government policy.

METHODOLOGY

The present study adopted mixed research design. The method provides a better understanding of a research problem. It also collects, analyses, and involves mixing of both qualitative and quantitative data.

The target population included staff members of University of Nairobi, Chuka University and Kirinyaga University. The universities were sampled purposively based on the 2018 webometrics ranking which found that the best ranked university in Kenya was University of Nairobi; Chuka was averagely ranked and the lowly ranked was Kirinyaga.

The staff were drawn from the library, ICT and research departments. These departments are mainly involved in Webometrics ranking. According to Owens (2002), 10 – 45 % of the population size is deemed to represent the entire population. The researcher collected data from a representative sample of 30 % of the entire target population. This population provided reliable information regarding the challenges faced by academic libraries in supporting improved webometrics ranking. In the University of Nairobi, the researcher purposively selected 40 librarians including; Deputy University librarian – Technical, the head of repository content section, the repository manager and 6 librarians involved in that section and other librarians involved as head of sections and colleges, 10 ICT staff, and 3 staff from research production & extension department, giving a total of 53 respondents. In Chuka University, the researcher purposively selected Senior Assistant Librarian, 6 key librarians involved as head of sections, 3 ICT personnel and the Director in-charge of research department, giving a total of 10 respondents. While in Kirinyaga University, the researcher purposively selected the Deputy University Librarian, 5 key librarians involved



as head of sections, 2 ICT personnel and 2 staff involved in research activities, giving a total of 10 respondents.

The study adopted interviews as to collect primary data from selected respondents. Semi-structured questionnaires were used as the data collection instruments. The researcher used descriptive statistics that is frequency distribution tables to compute mean and enable the researcher to present quantitative findings in a manageable and understandable form. In addition, the data was interpreted and discussed in relation to the research objective. Data generated from open-ended questions was the main source of data for qualitative analysis. Qualitative data was analysed using content analysis.

RESULTS AND DISCUSSION

This section presents and discusses the findings of the study. The first section presents the background characteristics of the participating staff members. The rest of the sections are presented based on the research objectives.

Demographic Information

The majority (55.4%) of the staff members were male while (44.6%) were female. With regards to age, the majority (53.5 %) of the staff members were aged between 31 to 40 years; (30.4%) were between 21 and 30 years old whereas (16.1%) were between 41 and 50 years. Pertaining working experience, the majority (76.8%) of the respondents had an experience of 5 years and above. The others, (23.2%), had an experience of 3 to 4 years. In reference to highest level of education attained, (3.6%) had attained their Doctorate degrees; (33.9%) had Masters Degrees; (51.8%) had Bachelor's degrees; while (10.7%) had Diploma qualifications.

Challenges Faced by Academic Libraries in Supporting Improved Webometrics Ranking

The study aimed at determining the challenges faced by academic libraries in supporting improved webometrics ranking. All (100%) of the respondents indicated there were challenges faced by their respective university libraries in supporting improved Webometrics ranking. These include:

Substandard quality of uploaded information materials. According to Sung (2012), low quality information affects the scholarly work, which depends on the information. Substandard information creates mistrust in the libraries and reflect negatively on universities' libraries, lowering the confidence of its users;

Approval bureaucracy in uploading information materials. In agreement with this finding, Stooke and McKenzie (2011) asserts that the tasks of maintaining the library are considered to be distinct from those that relate directly to the achievement of the library's overall goals. Therefore, requiring assurance between library management and staff members which, in most cases, delay decision making;

Lack of adequate knowledge on how Webometrics works. This leads to resistance from researchers to provide information to the repository. Respondents noted that a great number of the academic library users have limited information on how Webometrics continuously promotes research thereby enhancing their institution's Webometrics ranking;



Poor Internet connectivity. The majority of the respondents in the three universities use the Internet for their research. Weak Internet connection discourages library users.

Ways of Dealing with the Challenges Academic Libraries Face in Supporting Improved Webometrics Ranking of their Parent Institutions

Staff members identified strategies to deal with the challenges Kenyan academic libraries face in supporting improved Webometrics ranking of their parent institutions. These include: Shorten approval levels for uploading information materials. The academic libraries' management should begin to think more open-mindedly, specifically with a perspective to creating a working environment that is reasonable by minimising bureaucratic values compliance;

Increase Internet bandwidth. The respondents viewed an increase in Internet bandwidth as central to the mission of their respective academic libraries. Also, they observed that an increase in Internet capacity can benefit libraries by helping user's to find scholarly information swiftly and easily;

Enhance the use of plagiarism detecting software to improve the quality of research. This response is in line with an observation by Larsson and Hansson (2013) who indicated that integration of anti-plagiarism approaches and improved workflows are essential to academic libraries in order to increase the quality of the researches and studies conducted;

Train library users on the importance of Webometrics ranking and quality research. According to Silvani *et al.* (2010), optimum Webometrics ranking and good quality research results not only provide the greatest amount of traffic, but instils trust in consumers on the worthiness and relative importance of the website.

These findings signify that shortened approval levels for uploading information materials, increased connectivity as well as use of plagiarism detecting software and adequately training library users on Webometrics ranking and quality research are the key ways of dealing with the challenges facing the academic libraries in supporting improved Webometrics ranking. The findings corroborate Adeyoyin (2005) study on level of Webometric awareness among the staff of Nigerian university libraries. The study reached a conclusion that Webometric unawareness among the library users was a challenge facing university libraries in Nigeria. These library users and professionals should attain effective Webometric literacy training and improve their Webometric infrastructure.

CONCLUSION

Bureaucratic and connectivity barriers as well as substandard research and inadequate knowledge on Webometrics are the key challenges facing Kenyan academic libraries in supporting improved webometrics ranking. These challenges can be resolved by shortening approval levels for uploading information materials, increasing Internet bandwidth, enhancing the use of plagiarism detecting software to improve the quality of research, and training library users on the importance of Webometrics ranking and quality research.



RECOMMENDATIONS

This study recommends that Universities' management should conduct training workshops to academic library staff members on dynamics and importance of Webometrics. The management should also shorten approval levels for uploading information materials. More so, the universities' management should provide financial and infrastructural resources to enhance Webometrics in the institutions. Academic libraries' users should strive to attain more information on their own regarding the importance of Webometrics and quality research. They should overcome technophobia and implement technological approaches in their research. Scholars using the academic libraries should also strive to utilise available and publish more e-resources.

Practical Implications of the Findings

The findings of this study can be used by Kenyan and other global institutions of higher learning on the mechanisms they can adopt to increase the capacities of their academic libraries so as to improve the contribution of these libraries to Webometrics. The findings are also crucial for policy makers and policy implementers to effectively understand the challenges faced by academic libraries in supporting improved Webometrics Ranking.

REFERENCES

- Ademodi, D. T., & Adepoju, E. O. (2009). Computer skill among librarians in academic libraries in Ondo and Ekiti States, Nigeria. *Library Philosophy and Practice*, 274, 1-7.
- Adeyoyin, S.O. (2005). "Information and communication technology (ICT) literacy among the staff of Nigerian university libraries". *Library Review*, 54(4), 257-266.
- Adomi, S & Anie, M (2006). Computer literacy skills of professionals in Nigerian University libraries and webometric ranking. *Information Research*, 27(3).
- Baldwin, L. (2012). Library and Webometrics in Developing Countries. *Higher Education*, 34 (25).
- Hirsch, J. E. (2012). An index to quantify an individual's scientific research output. *Proceedings of the National Academy of Sciences*, 219 (58), 165-172.
- Hertzell, D. (2012). "Bibliometrics History." In: *William Drake (ed.), Encyclopedia of Library and Information Science*, vol. 42. New York: Marcel Dekker
- Larsson, K., & Hansson, H. (2013). Anti-plagiarism strategies: How to manage it with quality in large-scale thesis productions. *International Journal for Educational Integrity*, 9(2), 60 – 73. Retrieved 8 March, 2016 from <https://www.ojs.unisa.edu.au/index.php/IJEI/article/view/893>
- Mwanzu, A. & Malesi, R (2015) Assessment of the Impact of the USIU- Africa Digital Repository on Research Visibility and Webometric Ranking. East African Multidisciplinary Annual Research Conference (EAMARC), 1 – 17. Retrieved 3 February, 2016 from <http://erepo.usiu.ac.ke/11732/2031>
- Onyancha, O. B., & Ocholla, D. (2007). The performance of South African and Kenyan universities on the World Wide Web: A Web link analysis. *International Journal of Scientometrics, Informetrics and Bibliometrics*, 11(1), 1-13.
- Owens, L. K. (2002). Introduction to survey research design. In *SRL fall 2002 seminar series*, pp. 78-105.
- Rabai, T. (2013) *African Public Library Systems: A Literature Survey*. Oxford: Blackwell.
- Rahman, E., Khatun, B. & Islam, O. (2008). Library Education Webometrics in Bangladesh. *Information Metrics*, 14 (26).
- Ranking Web of Universities (2018). Retrieved 13 November, 2018 from, <http://www.webometrics.info/en/africa/kenya%20>
- Siwakoti (2008) Evaluation of webometrics in the academic libraries activities in Nepal. *Information Dynamics* 11, 57.
- Thelwall, M., & Wouters, P., (2008). Information-centered research for large-scale analyses of new information sources. *Journal of the American Society for Information Science and Technology*, 59(9), 1523-1527.
- Trushina, H. (2010). Computer literacy skills of professionals in Nigerian University libraries and webometric ranking. *Information Research*, 31(5).
- Silvani, A., Sirilli, G., & Tuzi, F. (2010). R&D evaluation in Italy: more needs to be done. *Research Evaluation*, 14(3), 207-215.



- Stooke, R. K., & McKenzie, P. J. (2011). Under our own umbrella: Mobilizing research evidence for early literacy programs in public libraries. *Progressive Librarian*, 36/37, 15.
- Sung, H. (2012). *An Exploration of the Essential Elements of Community Engagement in Public Libraries*. (Unpublished doctoral Thesis). Loughborough University, U.K. Retrived 17 July, 2016 from <https://dspace.lboro.ac.uk/dspace-jspui/bitstream/2134/9277/2/Thesis-2012-Sung.pdf>