Author Productivity and Collaboration Among Academic Scientists in Modibbo Adama University of Technology, Yola.

by
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Abstract
A lot of researches on author productivity and collaboration were carried out in different fields. Many of the researches established that productive, active and prolific authors are also highly collaborative. This study determines whether the most productive author among the academic scientists in Modibbo Adama University of technology, Yola, for the period 2001 – 2010 is also the most collaborative. The study used the weighted-average method to determine the extent of author collaboration. Spearman rank correlation coefficient was used to determine the correlation between productivity and collaboration among the subjects of the study. The study reveals that there is high degree of collaboration among the scientists and that the productive authors correlated positively with the collaborative authors.

Introduction
Authorship is one aspect that plays a great role in Information dissemination and communication activities. Authors' contribution to the field of knowledge can be viewed from different patterns, such as single authorship, Joint authorship and multiple authorship. As Librarians and Information Scientists, it is important to know the different levels of productive authors in relation to their levels of collaboration. This will go a long way in identifying the most relevant authors, so that researchers and academics can be referred to them. The identification of most productive authors will serve as a basis for creating sustainable network among the authors and between them and potential researchers and academics. It will also enable librarians and Information Scientists to know the most reliable information resources such as journals in which the most productive authors publish.

This study limits itself to academic Scientists who are professors in the School of Pure and Applied Sciences (SPAS) of Modibbo Adama University of Technology, Yola, with the view of determining the most contributive authors among them, so that the University Community will explore, utilize and benefit from their wealth of contributions. Therefore, Bibliometrics is employed as tool for conducting this research. Harande (2001) refers to bibliometrics as the application of statistical techniques to the literature of a given subject and it studies the pattern of communication between documented information and its potential users.

Academic scientists in the Modibbo Adama University of Technology, Yola comprises those academic in the following departments

i. Biological Sciences
ii. Biochemistry
iii. Chemistry
iv. Geology
v. Mathematics and Computer Sciences
vi. Statistics and Operational Research.
vii. Microbiology
viii. Physics

Table I: Distribution of Academic Scientists in Modibbo Adama University of Technology, Yola

Dept/Rank	**Professor**	**Associate Professor**	**Senior Lecturer**	**Lecturer I**	**Lecture II**	**Assistant Lecturer**	**Total**
Biological Sciences	3	3	1	3	2	1	13
Biochemistry	1	0	0	5	0	2	8
Chemistry	1	1	4	0	4	1	11
Geology	1	2	2	2	1	2	10
Math/Computer	2	1	0	3	5	4	15
Stat/OR	2	1	0	3	1	3	10
Microbiology	2	0	0	1	1	3	7
Physics	2	0	3	3	2	2	12
Total	14	8	10	20	16	18	**86**

Source: Senior Staff Establishment Unit, MAUTECH. Yola.

It is penitent to note that such a study with this scope has not been previously done. Therefore the study is necessary in order to determine the productivity trend and collaboration levels of the academic scientists in the University. Hence, the study seeks to find answers to the following questions:

1. What is the extent of authorship among the academic scientists in MAUTECH. Yola?
2. What is the extent of author collaboration among the academic scientist in MAUTECH. Yola?
3. What is the extent of correlation between Productive and Collaborative author among the academic Scientist in MAUTECH. Yola?

A lot of researches on author productivity and collaboration especially in the field of sciences were conducted. Notable among them include Price (1963), Clarke (1964), Harande (2001), Hawandeh (2007), Swarna et al (2008). Author productivity as defined by Harande (2001) is the number of articles published by a potential author over a period of time: Whereas author collaboration is the act of writing/publishing an article by two or more authors.

In his findings, Subramanyam (2007) reported that collaboration affects the visibility and productivity of scientists. Hence, his categorization of authorship as: collaboration among colleagues, collaboration between organizations, Collaboration between teacher and pupil, collaboration between supervisor and assistant, researcher – consultant collaboration, and International Collaboration: He concluded that scientists collaborate more than those in the humanities' in terms of authorship. Similarly, this conclusion was earlier made by Weintraub (2000). Pao (2000) and Harande (2001) Postulated that heavy collaborators were also the most prolific in their fields. In developed countries like Australia, Norway and UK, the number of scientific publications is used as a measure of the research performance of the University systems (AaHojarvi et al, 2008). And research collaborations and publishing internationally, is thought by Hakala (2002) to give smaller science systems access to knowledge and raise the quality and visibility of their research activity.

Methodology

The data for this study were gathered from the Appraisal and Promotion Committee (A&PC) records of the University. Counting the number of papers authored both singularly, jointly and by multiple authors, analysis was made to determine the six most productive as well as the most collaborative academic scientists (Professors) in the University. The researcher, hence, chose number six as a yard stick for measuring the most productive and most collaborative among the scientist in the University. Descriptive statics was employed for the purpose of date analysis in this study.

Findings

Table 1 represents the rank list of the six most productive academic scientists (professors) in MAUTECH, Yola over the ten-year period the study covers. From this table it can be noted that the most productive academic scientist among the list is Prof. Barminas, J. T. who published 33 articles over the period the study covers. This is followed by Prof. Malgwi, M. M. Prof. Ahmed, N. M. and Prof. Alo, E. B. who published 15 articles each.

Table 1: Author Productivity list showing the 6 most productive academic scientists in MAUTECH, Yola from 2001-2010

S/N	Authors Name	Number of Publications										Total	Ranking
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010		
1	Prof. M. M. Malgwi	2	0	0	1	2	0	3	7	0	0	15	2
2	Prof. E. B. Alo	2	2	0	2	2	2	2	3	0	0	15	2
3	Prof. J. N. Maduako	1	1	2	2	2	2	0	0	1	0	11	3
4	Prof. Ahmed N. M.	2	2	3	1	2	1	2	1	0	1	15	2
5	Prof. B. M. B. Ladu	0	0	2	0	1	2	0	0	0	0	5	4
6	Prof. Barminas, J. T.	1	0	0	0	2	4	11	6	6	3	33	1
Total		**8**	**5**	**7**	**6**	**11**	**11**	**18**	**17**	**7**	**4**	**94**	

Table 2: Author collaboration rank list among the 6 most productive academic scientists in MAUTECH, Yola from 2001-2010

Rank	Name	Authorship Pattern				Frequency of Collaboration
		Single	Joint	Multiple	Total	
2	Prof. M. M. Malgwi	0	8	7	15	15
2	Prof. E. B. Alo	0	6	9	15	15
4	Prof. J. N. Maduako	0	2	9	11	11
3	Prof. Ahmed N. M.	3	8	4	15	12
5	Prof. B. M. B. Ladu	0	3	2	5	5
1	Prof. Barminas, J. T.	0	14	19	33	33
	Total	**3(3.1%)**	**41(43.6%)**	**50(53.1%)**	**94(100%)**	

Table 3: Comparison of Productivity and Collaboration Ranking of the 6 most productive academic scientists in MAUTECH, Yola from 2001-2010

Authors names in Alphabetical Sequence	Productivity Ranking	Collaboration Ranking
Prof. Ahmed N. M.	3	3
Prof. E. B. Alo	2	2
Prof. B. M. B. Ladu	5	5
Prof. J. N. Maduako	4	4
Prof. M. M. Malgwi	2	2
Prof. Barminas, J. T.	1	1

Table 2 represents the author collaboration rank list among the 6 most productive academic scientists in MAUTECH, Yola from 2001-2010. It reveals that Prof. Barminas, J. T. was the most collaborative author, who published 33 articles in collaboration with other authors over the period the study covers. This is followed by Prof. Malgwi, M. M. and Prof. Alo, E. B. who published 15 articles each in collaboration with other authors over the period the study covers.

Table 3 represents the comparison between productivity and collaboration among the 6 most productive academic scientists in the University under study. The ranked data of both the productivity and collaboration parameters were correlated using the procedure for correlating ranked data. The result produced a rho of 0.5 indicating positive correlationship between the six most productive authors and the six collaborative authors.

Discussion

The findings of the study are that the most productive author is also the most collaborative author among the Scientists. This finding corroborates with that of Harande (2001) that heavy collaborators are also the most prolific in a given subject field. The most productive authors have 96.9% of their publication in collaboration during the ten years period this study covers. This is also elucidated by the fact that the calculated degree of author collaboration is 4.7. With this high value, it indicates that joint and multiple authorship dominates the publication pattern of the scientists under study.

Conclusion and Recommendations

This study demonstrates that the degree of author collaboration among academic scientists in Modibbo Adama University of Technology, Yola is very high. Multiple-authored papers dominate their publication over the ten years period the study covers (2001-2010). The study also shows that collaborative authors correlated positively with the productive authors.

Based on the findings and conclusion of this study the following recommendations were made:

a. In view of the positive correlation between productivity of collaboration there is the need to encourage inter disciplinary collaboration between scientist.
b. The need for University authority to formulate policy that will encourage Professors to continue publishing even when they attain the rank of Professor

References

Aahojarvi et al 2008. "Bibliometric analysis of scientific publication. *Scientometric* 9 (1&2) 13-15

Hakala D. 2002. Collection in an invisible College. *Libri* Vol. 54: 117-127

Harande, Y. I 2001. Author Productivity and Collaboration. An Investigation of the Relationship using the Literature of Technology. *Libri.* Vol. 51:124-127

Pao J. K 2000. Collaboration in Computational Musicology. *American Society for Information Science*. 30 (1) 38-45

Weintraub S. P 2000 Humanistic Scholar and the library. *Library Quarterly.* 47 (2) 30

Subtramanyam F. 2007. Bibliometric Studies of Research Collaboration: A Review. *Journal of Information Science*. 5: 36