BIBLIOMETRIC ANALYSES OF PUBLISHED WORKS ON BRUCELLOSIS IN NIGERIA

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ABSTRACT

Analyses of the works published on Brucellosis in Nigeria between 1927 and2004, were subjected to some bibliometric examination, with the following observations. One hundred and forty one (141) articles were authored by 49 authors (single and multiple). Most of the articles were published in journals (77.14%, with a few published as newsletters or technical reports. Etc. From the analyses, only six of the authors fall within the core-author zone with more than 55% of the total published articles, while more researchers on Brucellosis preferred to publish as sole author. Over 85% of the articles were published before 2000 and in trickles after year 2000.

INTRODUCTION

Pritchard (1969) coined the word bibliometrics to mean "shedding light on the process of written communication, and of the nature and course of development of discipline by means of connoting and analyzing the various facets of written communication". Several definitions have thereafter been given. For the purpose of this study however, Donohue (1973) Definition would be adopted, "it is the application of statistical and mathematical techniques for books and other media of communication".

It is the examination and analysis of published information in books, journals and other published media of communication in order to shed light on the properties of such information media.

It is also seen as the foundation for much of the technological advancement of the emerging Internet, and increasingly, is used for development of human-based knowledge systems. Bibliometrics is a field that has attracted a great deal of attention among scholars of all disciplines, as it tends to focus on the study and analyses of information resources by country, authors, languages, words, type, research methodologies, articles, obsolescence and distribution of authors in literature (Cole and Eales, 1917; ; Zipf, 1935; Burton and Kebler, 1960, Prichard, 1969), In Africa, the bibliometric method has not been widely popularized as would be expected. There is however, evidence of its application by West Africa scholars, particularly in Nigeria (Aina and Mabawonku. 1997;Aina,1998) and Ghana (Alemna and Badu,1994; Alemna, 1996). Aiyepeku (1973) first applied bibliometrics to geographical literature of Nigeria, after which many Nigerian researchers applied the same analysis to other fields of studies related to Nigerian publications (Lawani, 1973; Afolabi, 1975 and 1977;Alabi 1980; Ibeun, 1983).The benefit of such studies is that they help the library services, information scientists and the subject matter specialists to comprehend the unique of the discipline, thereby equipping them better. The measurement of research capacity is based on several variables. Three main variables include the registered on-going and completed research projects. The other one that is also widely favoured for research productivity analyses is based on publication output. The most commonly used indicators in this case are; journal articles, corporate publications, editorships or research reports, books or chapters in books, published proceeding, symposia or conferences, performance and exhibitions, book reviews, and patents, the final category could be the size of industrial property or intellectual property ownership. Publication counts are widely used to measure research productivity by individuals, organizations and even countries.

BRUCELLOSIS

Brucellosis is an important Zoonotic disease. The disease is called Malta. Mediterranean undulant or recurrent fever in man. The earliest mention of the occurrences of brucellosis on animal in Nigeria is recorded in the 1927 Annual report of the Veterinary Department. Brucellosis in livestock is a menace to both animal and human health. All breeds and sexes of animals are susceptible. Infections of domestic animals such as cattle (beef and dairy), sheep, goats, camels, pigs, donkeys, poultry etc. may lead to abortion causing loss of calves, lambs, kids, foals, sows, infertility, reduced productivity as a result of reproductive losses and decrease in milk yield. It can quickly spread within herd/flock resulting in significant economic losses.

Calves can also be infected by the intake of the milk of their infected dams, if this has not already occurred at birth by contact with the infected tract of the mother. Latently infected calves are potential cause of later outbreak of the disease and thus of its possible further spread. Additional problems of brucellace infection are in the uncertain incubation period, which an infected animal can conceal under certain conditions for several months or years. The infected animals can go undetected except where female animals aborted. Human beings can be infected by contact with diseased animals, their excretions, ingesting infected animals and poultry products. Exposure to aerosols of infective dust, and handling wools or infected animals in the slaughterhouse/slaughter slabs increase human risk. If passed to humans it may lead to recurrent fever or other forms of medical problems. As the disease is hardly spectacular in its chronic stage and indeed, despite problems the losses and yield decreases it causes, it often goes undetected.

OBJECTIVES

The objectives of the analyses are to;

Determine the different journals and the different formats of published works on brucellosis in Nigeria.

Determine the core authors; and the areas in which researchers concentrate their efforts and other areas that need further attention. It is hoped that the results from this study will help library services, students, Information scientists and researchers get information quickly on works done on brucellosis in the country and to encourage the practice of interpersonal communication

METHODOLOGY

The data for this study are published works on Brucellosis in Nigeria from 1927-2004 which were compiled by this author in 2005. 141 publications from journals, Books, theses, conference proceedings annual reports and technical reports, symposium and newsletters were analysed.

Results and Discussion

A total of 141 publications on Brucellosis in Nigeria were published between 1927 and 2005 in seven (7) mediums of publications as listed in table 1 below;

Table 1.1; Distribution of Publications

Medium	Frequency	%
Journals	108	77.14
Theses	11	7.80
Animal Reports	11	7.8
Books	4	2.83
Proceedings	3	2.12
Newsletters	3	2.12
Technical Reports	1	0.70
Total .	**141**	**100.00**

The table above shows that more publications occur through the journal medium than any other mediums of publication. This source of reportage takes care of recently completed research works, on going but with substantial result, and active research results are often published in journal medium than any other and thus make this medium very active. A study in brucellosis is therefore active. This pattern is not strange, since measurement of research capacity is based on the registered on-going and completed research projects. It is therefore informative that researchers on Brucellosis look towards this medium than the rest. The implication for libraries and librarians is that they should use the mediums analysed above for their collection development, necessary referencing, content analysis and other bibliographic considerations on the subject matter. Since the journal medium of reportage is an active one, it follows that Brucellosis is a rapidly reportage area of Livestock Science.

Author Distribution

A careful look at the distribution pattern of the authors to publication provides the picture of the influx of articles on brucellosis. It is observed that the 141 articles are authored by 117 authors as single or joint, with as little as 8 of them with 110 articles, while 87 authors published one time each. Table 1.2 explains further.

Table 1.2; Distribution of Author to article

Score	No. of Authors	Cumulative Authors	Cumulative Frequency	% of Score	Log of Authors
24	1	1	24	22.4	0.006
21	1	2	45	19.6	0.301
13	1	3	58	12.1	0.477
12	1	4	70	11.2	0.602
11	2	6	92	10.3	0.778
9	2	8	110	8.4	0.903
6	1	9	116	5.6	0.954
5	4	13	136	4.7	1.113
3	2	15	142	2.8	1.176
2	15	30	172	1.9	1.477
1	87	117	259	0.9	2.068

The frequency shown on this table is to depict the total number of times some authors contributed with others to some articles jointly.

STATUS OF PUBLICATIONS

A cursory look at the table 1.2 above shows a curious departure from the known pattern in scientific publications, which is multidisciplinary, as most of the publications are single authored.

It is observed that 76 (54%) of the publications were published by single authors, while the remaining 65 (46%) were multiple authored. The explanation for this trend is more of statistical than empirical, as 8 (16 3%) of the authors account for 110 of the publications.

Table three below explains further

Table 1.3 Status of Publications

Status	Number	%
Single	76	54
Joint/Multiple	65	46
Total	142	100

Core Author

The core principle dates back to 1940s when Samuel Bradford (1948)used the principle to find out the most useful journals to a field of studies. He arranged the Journals into a list with the most productive numerically at the top, followed by the next most productive and so on. He reasoned that by the end of the day, those at the top would form a nucleus of most useful sources for that area of study. This nucleus was later referred to as the core.

Today, this technique has gained general acceptability among information scientists It is acknowledged for its applicability to all forms of bibliographic works. Brookes (1969) and Cole (1979) used the Core theory on the intellectual influence in scientific research, and concluded that this theory is capable of separating the "wheat from the chaff" in intellectualism. In 1984, Okanlawon applied the core theory on the literature of the Veterinary Medicine and Adewole (1991) applied the theory to study the authors of Animal production.

Finding the core authors in Brucellosis elicited the use of graphical formula as opposed to the verbal version. The graphical formula is more consistent with practical situation. Brooke's application of the formula shows that the point where the initial curvature ends, and where the lineal portion of the graph takes off, is the core. Using table 1.2 above, a Bradford-Zipf bibliography was plotted to determine the core authors in the field of Brucellosis in Nigeria (Fig. 1) from the table and figure, it can clearly be seen that all the 117 authors that have published on Brucellosis in Nigeria can conveniently be grouped into 11 sets, and the bibliography that follow shows that the 'Core Zone' falls on six (6) (Log 0.778). This implies that only the first six authors with publication scores of 11-24 and a cumulative of 92 scores is the core authors on Brucellosis in Nigeria.

This number (6) which is barely 5% of total authors is responsible for over 35% of the total publishing on Brucellosis in Nigeria. This is the first zone of the bibliography.

A second and subsequent zone could be drawn to a point whereby productivity might be determined. The second zone for instance produced only 44 scores with scores ranging from 5-9 scores.

The implication of this analysis is that only about 5% of all the publishing authors could be considered as having the primary information on Brucellosis in Nigeria. They would form the nucleus of experts on the field, and all others (about 95% have only built on the knowledge of these primary authors or experts. Acquisitions would also revolve round these primary authors.

CONCLUSION

From the analysis herein, it is noticed that scientists on Brucellosis publish more as single author than join/multiple. This is not the current trend in science and technology, and explanation of this scenario is more of statistical than empirical. Secondly, the core authors zone would assist other researchers in finding information quickly, as they may necessarily not have to search a whole gamut of articles to chart their course of research in Brucellosis. Brucella work had remained a rare area for female scientist, as no female scientist was listed in the list of publications from 1927-2004. Finally, only very few references are recorded in 2000-2004, with most of these references from the older scientists. Younger scientists should therefore create interest in research into Brucellosis. It is hoped that the research of the analyses will help library services, particularly in its acquisition processes, researchers, students and information scientists generally has remained a vital tool for information works in all facets of human endeavors.

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