

The Marginalized Knowledge: Informetric Analysis of Indigenous Knowledge Publications 1990-2004)

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Background and Purpose of the Study

Indigenous knowledge can be defined (e.g. NRF n.d) as “complex set of knowledge and technologies existing and developed around specific conditions of populations and communities indigenous to a particular geographic area” with an emphasis that “these forms of knowledge have hitherto been suppressed ... therefore, IKS should be brought into the mainstream of knowledge in order to establish its place within the larger body of knowledge”. It is recognized through the development and growth of bibliometrics (e.g. Hertzfel 1987, Sengupta 1992, Hood and Wilson 2001, Ikpaahindi 1995, Rousseau 2002, Wormell 2002.) that infometrics could be employed for the quantitative analysis of all forms of recorded knowledge and information in pure, applied and social sciences (see Twinning 2001, Laudel 2001, Wallace 1989, Sengupta 1992) including indigenous knowledge. The purpose of this paper is to demonstrate the effectiveness of informetrics for the determination of the development of Indigenous Knowledge (IK) by analysing records indexed in selected EBSCO and South African Bibliographic Network (SABINET) databases from 1990-2004 that reflect both international and South African publication trends.

Methodology

Notwithstanding limitations of descriptive informetrics some of which are expressed by Lewison (2002), Pichappan and Sarasvady (2002) we have recognised its popularity (see Onyancha and Ocholla 2004) and used the method to analyse and to determine IK by document type, by eight databases hosted by EBSCO and SABINET, by growth of the literature over a period of 15 years, by source where the document is published, by document affiliation, by subject domain, and by nature of authorship. A Boolean search by use of two broad terms, thus Indigenous Knowledge (IK) OR Traditional Knowledge (TK) was conducted on the selected databases. Six of the eleven EBSCO Host- databases were purposively selected for analysis. They included Firstly, Academic Search Premier (ASP), a multi-disciplinary database that provides full text for over 4,000 scholarly publications that includes over 3,100 peer-reviewed

journals, secondly, AGRICOLA (AGRICultural OnLine Access) that is a bibliographic database of citations to the agricultural literature created by the National Agricultural Library (NAL) and its co-operators. The records describe publications and resources encompassing all aspects of agriculture and allied disciplines, including animal and veterinary sciences, entomology, plant sciences, forestry, aquaculture and fisheries, farming and farming systems, agricultural economics, extension and education, food and human nutrition, and earth and environmental sciences. The database includes journal articles, book chapters, short reports, and reprints. Thirdly, Business Source Premier (BSP), the largest full text business database providing nearly 3,300 scholarly business journals that includes full texts for more than 1000 peer-reviewed journals. Fourthly, ERIC that focuses on education resources/records consisting of 2,200 digest and 980 educational journals. Fifthly, Master File Premier (MFP) that covers subjects of general interest by providing full texts to nearly 2000 general publications and the lastly, MEDLINE, that allows users to search from over 4600 journals on such subjects as medicine, nursing, dentistry, veterinary medicine, the health care system, pre-clinical sciences, and much more. In addition to EBSCO Host, relevant records were downloaded from two SABINET databases, that is the Index of South African Periodicals (ISAP) and the Current and Completed Research (C&CR) for the same period, were also analysed to determine the South African indigenous knowledge research/publication pattern and output. Data were captured, merged and stored in Excel spreadsheets and analysed by the categories highlighted. Microsoft Excel and Bibexcel were largely used to process and represent the quantitative data as outlined in the next section and obtain frequencies upon the removal of duplicates, respectively. Detailed results are represented are also reflected in six tables and two figures.

Results and Discussion

Author's note: Tables and figures have been left out because of limited space allocated to posters in the proceedings. However, all graphics were presented at the conference. *Editor's note:* Most sub-sections

of this section are not shown owing to length restrictions.

Growth of Indigenous Knowledge Literature from 1990-2004

The number of documents published over the duration of time is useful for trend analysis and may also be valuable for forecasting strategies to be undertaken for development. For instance, in measuring growth in IK literature, Fig. 1 demonstrates the trend of literature on indigenous knowledge from 1990 to 2004. Generally, there has been a remarkable rise in the number of IK documents overall from 1997. Speculatively, the rise could be attributed to the increased attention to knowledge management and the recognition of IK in the knowledge domain. Second, it could be the improvement on resource support to IK research and popularisation particularly due to IK impact on, for example, health and nutrition in areas such as in sports and alternative medicine as well as in the informal sector/industry. The desire of indigenous communities, to preserve their heritage and the opportunities and threats created by globalisation, has increased the need for capturing, recording, storing and disseminating IK. We believe that there is a remarkable sensitivity and development of IK in South Africa as attested by the existence of policies and structures by/in the government of South Africa (e.g. at the Department of Arts, Culture and Technology and the National Research Foundation - NRF). Analysis of the records by databases in Fig.2 display negative growth in current and completed research in 2002. We feel that this could be attributed to gradual indexing that goes into the following year.

Conclusions

The study reveals that most IK is published in journals. The growth of IK documents has significantly increased from 1997 - 2004. This may suggest that there is increasing interest (e.g. healing, pharmaceuticals and support (e.g. intellectual property) to IK. The increase of publications over time (15 years) is spread among the databases. There is no core IK journal. Single authors produce over 58% of the IK documents. IK research and link by country, apart from US, India, South Africa (features strongly because of using SABINET hosted ASAP and C&CR) and Mexico, is insignificant. There is a diversified scatter of IK research affiliation at the Universities in South Africa. The subject scope of IK research is diversified and multidisciplinary in scope and orientation. There is a strong reflection of IK in medical literature (e.g. searches by traditional medicine and alternative medicine yield large amount of records) that suggests increased recognition of IK for healing purposes.

While recognising efforts made to capture IK on the web (see Le Roux 2003) and some government IK initiatives and strategies (e.g. in South Africa), we

conclude that IK requires strong integration in KM for rapid development and that development of national IK policies, structures and research, databases or publications is essential for popularising and developing the local/tacit/intangible knowledge. Further research will focus on the analysis of Medline database by other key words such as alternative medicine and traditional medicine to enable analysis of more records, improvement on subject representation and creation of mini thesaurus on IK.

References

- Hertz, D (1987) Bibliometrics, History of the Development of Ideas in Statistical Bibliography or Bibliometrics? In: A. Kent, & H. Lancour H., (eds), *Encyclopaedia of Library and Information Science*, Vol.42, 144-219.
- Hood, W.W., and Wilson, C.S.(2001). The literature of bibliometrics, scientometrics and informetrics. *Scientometrics*, Vol.52, No.2, 291-314.
- Ikpaahindi, L. (1995) An Overview of Bibliometrics: Its Measurement, Laws and Their Application. *Libri*, Vol.35 (2), 163-177
- Laudel, G.(2001) What Do We Measure by Co-authorship? In: M.Davis and C.S. Wilson (eds), 8th *International Conference on Scientometrics and Informetrics Proceedings*, ISSI-2001 vol.1, 369-384.
- Lewison, G. (2002) From biomedical research to health improvement. *Scientometrics*, Vol.54, No.2, 179-192.
- Le Roux, J. (2003) Tapping Indigenous Knowledge on the World Wide Web. *Indilinga African Journal of Indigenous Knowledge Systems*, Vol. 2(1) June, 107-113
- National Research Foundation-NRF Indigenous Knowledge Systems available and accessed 24 April 2005: <http://www.nrf.ac.za/focusareas/iks>.
- Onyancha, O.B. and Ocholla, D.N. (2004) An informetric analysis of the corruption literature based on Africa between 1990 - 2001. *South African Journal of Libraries and Information Science*, 70(2), 86-98.
- Rousseau, R. (2002) Timeline of Bibliometrics. Available: http://users.pandora.be/ronald.rousseau/html/timeline_of_bibliometrics.html. Accessed 20 March 2002.
- Sengupta, I.N. (1992) Bibliometrics, Informetrics, Scientometrics and Librametrics: an Overview. *Libri*, Vol.42, no.2, 75-98
- Twining, J. (2001). Bibliometrics - an overview. (Online). University of Denver Website <http://www.du.edu/jtwining/LIS4326/bibliometrics.htm> Accessed 12 July 2003
- Wallace, D.P. (1989) Bibliometrics and Citation Analysis. In: J.N. Olsgaard(eds), *Principles and Applications of Information Science for Library Professionals*. Chicago; ALA, 10-26
- Wormell, I. (2001) Informetrics for Informed Decision Making: Seminar Paper. Swedish-Lithuanian Seminar on Information Management Research Issues held on 21-22, Sept. 2001, at the University College of Borås, Sweden. Available and accessed 19 February 2003: <http://www.hb.se/bhs/seminar/semdoc/wormell.htm>