Research and Theory: A Bibliometric Analysis

Dr. Rajiv R. Paithnkar
Librarian
Toshniwal Arts, Commerce & Science College,
Sengaon
Tq. Sengaon Dist. Hingoli, Maharashtra

&

Mr. Shankar A. Dhande
Librarian
Vaidyanath College
Arts, Commerce & Science
Parli Vaijanath Dist. Beed Maharashtra.

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  Mr. Shankar A. Dhande

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Scientometric Portraits of Dr. M.S. Pradhan

Mangesh S. Talmale
Librarian,
Karve Institute of Social Service, Pune
e-mail:elibmangesh@gmail.com

Abstract

M.S. Pradhan, the well-known Indian Mamalist has been recognized as a very successful scientist. His publications had analyzed by year, domain, collaboration pattern, channels of communications used etc. he had published 84 papers during 1974 to 2008 in various domain , out of which 10 papers in Domain A-Chaemotaxonomy,11 papers in B- Ecology ,3 papers in C-Environmental Impact Assesment , 1 papers in D-Endocrinology ,33 papers in E-Inventorization, 6 papers in F-Morphology, 2 papers in G-Pest Control,13 Papers in H-Taxonomy and 5 papers in I- Wildlife .The highest collaborative coefficient was observed 1974, 1976, 1981, 1983, 1984, 1986, 1991, 1992, 1998,1999, 2000,2001and2003.The productivity coefficient was 0.65 and the publication density was 3.23. In his entire carrier as a scientist he has collaborated with 27 eminent scientists. He has the highest collaboration with Bhagwat,A.M.(7), Kulkarni, P.P(5).

Keywords M.S.Pradhan, Scientometric; Publication Productivity, Collaborative pattern, Collaborative coefficient, Channels of Communication, Bradford Distribution.

I. Introduction

Science should be taken in a wide sense of its meaning. Scientometric mean the scientific measurement of the work of scientists, especially by way of analyzing their publications and the citations within them. (Wikipedia.org,2020). It also says quantitative aspects of science of science and technology and would include technometrics. According to Gallo, "Scientometric doesn't constitute the system of scientific and technical information and documentation but should be regarded only as a structure of knowledge under the development and intended to strengthen the former." According to Morales," Scientometric doesn't deal with the laws of information and communication, but with objective quantitative laws that really determine the level of development of science. Scientometric is a quantitative study for demonstrating that organized knowledge is amenable to measurement. In this paper we would like to look into the scientific work done by Dr. M.S. Pradhan and his role for the advancement of science in India and elsewhere.

II. A brief history of Dr. M.S. Pradhan

Dr. M.S.Pradhan was born in Nagpur city in Maharashtra state on 11th January 1947. He has completed M.Sc. (Zoology) from Nagpur University in the year 1969. He was awarded Ph.D. (Zoology) in the year 1976 from Mumbai University on the topic: Studies on Bombay Rats under the guidance of world famous herpetologist Dr.Deoras from Haffkin Institute Parel, Mumbai .
Dr. M.S.Pradhan joined Patkar College ,Goregao , Bombay & Ruparel College ,Bombay during the year 1975 to continued up to Dec till 1976 as Part-Time Demonstrator. He was then selected through UPSC for the post of Asst. Zoologist in Zoological Survey of India W.R.S., Pune-5 and joined the dept on 10th Dec. 1976 to

continue in this post upto 3rd feb1983. Afterward he was selected for the post of Zoologist/Scientist–B, Scientist-C, Scientist-D (Dy. Director) Scientist –E (Jt. Director) in the same department in the years 1983,1989,1994,2004 respectively. He has proceeded on superannuation on 31st Jan. 2007 at the age of sixty.

Major contributions of M.S. Pradhan have been in the following area Ecological, taxonomic and chemotaxonomic studies small mammals from Western Ghats. Taxonomic studies of small mammals. Hair impression pattern studies of rodents and scheduled mammals from Western Ghats. Preparation of faunal inventories (Mammalia and Reptilia) from the selected conservation area. Identification of the wildlife material, products and derivatives, whether genuine or fake, seized under wildlife (Protection) Act and CITES by the Law Enforcement authorities. He has successful carried out number of scientific projects as follows Chemotaxonomies studies of small mammal (pioneer studies introduced in ZSI) Nilgiris Biosphere Reserve: with respect to Mammalia Ujani wetland in Pune Dist. with respect to higher chordates Ernakulam National Park, Kerala, with respect to Mammalia

Melghat Tiger Project in Maharashtra with respect to Mammalia and Reptilia, Tadoba National Park in Maharashtra with respect to Mammalia and Reptilia, Pench National Park in Maharashtra with respect to Mammalia and Reptilia. Identification of scheduled mammals on the basis of hair impression patterns. Studies of proposed western coal field projects in Wardha river valley region.

He has also done many scientific works as follows. To assess the threat categories for mammal species in general and bat, rodent and insectivore species in specific for IUCN. Identification of unidentified material (Mammalia, Reptilia)

- Curatorial Work (Mammalia, Reptilia)

- Submitted Environmental Impact Assessment (E.I.A.) reports of assigned multipurpose projects about 50.
- Advisory services extended to scientific Institutes, Forest, Police, customs Depts. Etc. (Advisory services for C.E.S. Bangalore, Forest, Police, Railway, Customs Depts.)
- Examinership (External) (evaluate Ph.D. thesis received from Universities.)
- Recognized p. g. teacher for zoology in Pune University.
- Attend meetings as members of Research Advisory Committee, Financial Negotiation Committee for World Bank aided Maharashtra State Forestry projects& Member of Zoo Advisory Board of Pimpri Chinchwad Municipal Corporation.
- Represented ZSI WRS, Pune in the Maharashtra state wildlife board meetings during 2006-2007.
- Assisted ZSI in the proposed amendments in India wildlife protection act schedules.
- EIA studies of about fifty multipurpose developmental projects in Maharashtra state.

The techniques Character and laboratory facilities was introduced and established in Z.S.I. for the first time since 1980 by him. It is a new concept in taxonomy is introduced in India. Using this technique, he has published 7 papers in joined collaboration in national and international journals.

During his tenure of 30 years, he has actively carried out and environmental input studies of about fifty multipurpose developmental projects in Maharashtra state. Making use of this experience in this study. He delivers the no. of lectures on this topic in training workshop arranged for engineers from irrigation, CWC etc. other related departments EIS studies of Wardha river valley for WCL Nagpur is Wardha monitoring in report has been published in scientific papers in one of leading journal.

Being expert in identification in mammals and reptile's species Dr. M.S. Pradhan, assisted the Maharashtra state forest dept. and other law enforcement authorities such police customers etc. in identification of wild life monitoring products and derivatives. he was the certificate issuing authorities. This certificates is submitted as exhibits the court of law. He has also assisted Maharashtra forest department as expert member in identification of wild life material products and derivatives in issuing the possession certificates to the legal owners of the projects.

Assisted Z.S.I. in the proposed amendments in India wildlife (protection act schedules) during a meeting held in wild life institute Dehradun in april2007. Even after retired he is still active the matter related with wildlife /EIS studies/Biodiversity assessment projects of PCMC. He is the member of PCMC project. He has started his own consultancy extending advisory service in there subject to individuals and other related agencies including law enforcement.

III. Objectives

The main objective of the study is to highlight quantitative aspects of the research communications by way of analysing the following features of research output.

- To find out year-wise publication productivity of author,
- To find out the authorship and collaboration pattern in the publications,
- To find out the domain wise contribution,
- To find out the author productivity,
- To find out the Use of channels of communication by author,
- To verify Bradford distribution of papers and sources.

IV. Methodology

The complete bibliography of his research publication from 1974-2008 has been catalogued and standard bibliometric fields were analysed by normal count procedure for domains, authorships and journals. The terms enumerated above are more or less well known. Still, they are being explained here for easy reference.

Authorship Status is the position of the author, i.e., first, second, third, etc. in paper.

Channels of communications are the sources chosen by the author to place his publications.

Collaboration Coefficient is the ratio of the number of collaborative papers to the total number of papers published in a domain during a fixed period of time.

Core Collaborators are those authors who have made substantial contribution (in terms of the number of papers) in association with the principal author, in this case M.S. Pradhan.

Principal Author is the most dominant among the authors forming a collaborative group.

Productivity is a measure of the number of publications brought out by the author Synonym. Publication productivity

Productivity Coefficient is the ratio of the productivity age (corresponding to the 50-percentile productivity) to the total productivity life.

Productivity Life is the count from the year in which first paper by an author was published till the latest year of publication under consideration. Synonym: productive age.

Publication Density: Frequency of papers per channel.

Secondary Author is any in a collaborative publication other than the first author.

V. Result and Discussion

1. Domain wise contributions

The informing activities of Dr. M.S. Pradhan's were considered for the present study. The entries in the bibliography were arranged in a classified order under the following domains:

A=Chaemotaxonomy, B=Ecology, C=Environmental Impact Assessment, D=Endocrinology, E=Inventorization, F=Morphology, G=Pest Control, H= Taxonomy, I=Wildlife

1.a. Domain Wise Cumulative Publication Productivity

During 1974-2008, Dr. M.S. Pradhan had contributed 10 papers in the domain of Rodents (1974-2005), followed by 31 papers in the domain of General Mammals (1992-2008) ,8 papers in the domain of Reptiles (1997-2008) and 3 papers in the fish domain (1977-1984) The table -1 provides the information about domain-wise authorship pattern and number of publications and authorship in each domain. Of two authorship papers, 3 papers in domain A, followed by 4 papers in Domain B, 8 paper in domain E ,4 paper in domain F,2 papers in domain H and 1 paper in domain I. Of three authorship papers, 3 papers in domain A, followed by 2 papers in Domain B, 1 paper in domain D, 4 papers in domain E, 3 papers in domain H and 2 papers in domain I. Of four authorship papers, 2 papers in domain H. Of five authorship papers, 2 papers in domain H.