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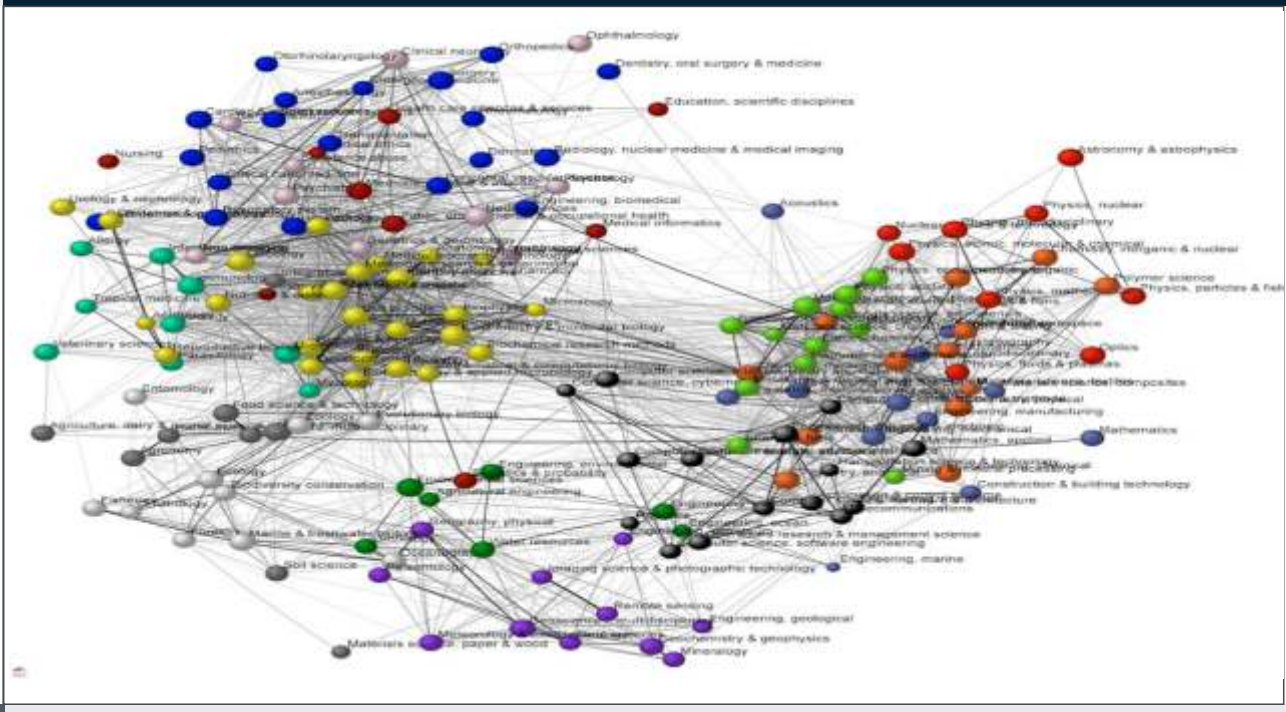

Article

Science Mapping and Visualization Tools used in Bibliometric & Scientometric Studies: An Overview

Pallab Pradhan, Scientist B (LS)

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N-LIST (E-resources for College)
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Open Journal Access System (OJAS)
http://www.inflibnet.ac.in/ojs/

Integrated e-content Portal
http://content.inflibnet.ac.in/

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From Director's Desk

Wish you all a very happy, healthy and prosperous new year

The Centre was completely occupied with new activities, services and responsibilities entrusted to it by the University Grants Commission, MHRD and other concerned agencies during the period under report. The work related to India Rankings 2017 continued on full throttle. MoUs were signed with Clarivate Analytics and Elsevier Science for retrieval and verification of data on publications and citations for institutions that are applicant for India Ranking 2017. The Centre designed and developed platforms for capturing data, perceptions and feedback from public and peers. Other important projects that kept us busy included e-PG Pathshala, Vidya-mitra, SWAYAM and SWAYAM-PRABHA.

Reviewing of e-content development work under e-PG Pathshala and its repurposing into MOOCs format under SWAYAM project continued to be another important activity that kept us busy interacting with various stakeholders including principal investigators for various subjects, paper coordinators and content writers. A meeting of the reviewers for the subject sociology was organized in the month of November, 2016 at INFLIBNET Centre involving PIs and paper reviewers.

10th PLANNER 2016 was organized during the quarter under report in the North Eastern Hill University (NEHU), Shillong from 9th to 11th November 2016. The Conference was a huge success with more than 200 delegates who participated the convention including 29 publishers who took part in the exhibition organized during the Convention. The proceedings of the conference published 42 papers and 17 papers were selected for poster presentation out of 128 submissions. The Convention was inaugurated by Mr. R G Lyngdoh, Vice Chancellor, Martin Luther Christian University in the presence of Prof. Sri Krishna Srivastava, Vice-Chancellor, NEHU and other dignitaries. Prof. Jagtar Singh, Department of Library and information Science, Punjabi University, Patiala was the Keynote Speaker for the convention.

A three-day National Conference on e-Theses and Dissertations (iETD-2016) was organized at the INFLIBNET Centre from 5th to 7th October, 2016, wherein Prof. Anamik Shah, Vice-Chancellor, Gujarat Vidyapith, Ahmedabad uploaded 1,00,000th theses into the Shodhganga Repository, highlighting yet another milestone for this ambitious Project.

In addition, a two-day National Workshop on Capacity Building for LIS Professional using Open Journal System for e-Publishing was organized at TISS Mumbai and a National Workshop on Content Management System was organized at Sikkim, Gangtok in month of November 2016. An Advanced Training Programme on Shodhganga was organized at INFLIBNET Centre, Gandhinagar from 14th to 16th December, 2016 followed by a three-day National Workshop on Data and Statistical Analysis using R Programming was organized at the INFLIBNET Centre, Gandhinagar from 19th to 21st December, 2016 wherein "Data Analytic Tool" developed using R under ICSSR Data Repository project was demonstrated to the participants.

The Newsletter for this quarter include a feature article "Science Mapping and Visualization Tools used in Bibliometric & Scientometric Studies: An Overview" by Mr. Pallab Pradhan, Scientist-B (LS). I am sure you would enjoy going through this article.

(Jagdish Arora)

Training Programme on SOUL 2.0, INFLIBNET Centre, Gandhinagar

The INFLIBNET Centre regularly conducts SOUL 2.0 Training Programmes to impart training on Installation and Operation of SOUL Software for its users. During this quarter, 129th Training Programme on SOUL 2.0 was organized at INFLIBNET Centre from 28th November to 3rd December 2016. The Programme was coordinated by Mr. H G Hosamani, Scientist C (LS), INFLIBNET Centre. 12 participants including library science and computer science professionals from across the country attended training programme.

Participants of 129th Training Programme on SOUL 2.0 with the Director and Technical Staff of the INFLIBNET Centre

Workshop on URKUND: A Plagiarism Detection Tool under Shodhaganga

One-day Workshop on URKUND: A Plagiarism Detection Tool under Shodhganga & Mendeley: Referencing Tool and Inauguration of ETD Lab, Assam University, Silchar, 7th November, 2016

One-day Workshop on URKUND: A Plagiarism Detection Tool & Mendeley: Referencing Tool was organised by Assam University, Silchar in collaboration with INFLIBNET Centre, Gandhinagar on 7th November, 2016 at Bipin Chandra Paul Seminar Hall, Assam University, Silchar. Dr. Arun K Sharma, Librarian coordinated the programme and welcomed the guests and participants. Prof. Dilip Chandra Nath, Hon'ble Vice-Chancellor inaugurated the programme. Mr. Manoj Kumar K, Scientist D (CS), INFLIBNET Centre made detailed presentations on URKUND: A Plagiarism Detection Tool & Mendeley: Referencing Tool. He demonstrated method of generating similarity report and preparing references using Mendeley and integrating it with word processing software. The programme ended with a question answer session that addressed most of the queries of the participants. Around 120 participants including faculty members and research scholars participated in the programme. Dr. Arun K Sharma extended a warm vote of thanks at the end of the programme.

Participants of User Awareness Programme on URKUND: A Plagiarism Detection Tool & Mendeley: Referencing Tool, Assam University, Silchar

Prof. Dilip Chandra Nath, Hon'ble Vice-Chancellor, Assam University inaugurated the institutional Digital Repository (IDR) along with ETD Lab under Shodhganga project at Central Library, Assam University in presence of Mr. Manoj Kumar K, Scientist D (CS), INFLIBNET Centre and Dr. Arun K Sharma, Librarian, Assam University.

Prof. Dilip Chandra Nath, Hon'ble Vice-Chancellor, Dr. Arun K Sharma, Librarian, Assam University and Mr. Manoj Kumar K, Scientist D (CS), INFLIBNET Centre on the Dais during the User Awareness Programme on URKUND: A Plagiarism Detection Tool & Mendeley: Referencing Tool and Inauguration of ETD Lab, Assam University, Silchar

Specialized Training Programmes and National Workshops

Three-day National Conference on Electronic Thesis and Dissertation (iETD 2016), INFLIBNET Centre, Gandhinagar, 5th -7th October, 2016

Three-day National Conference on Electronic Theses and Dissertations (iETD 2016) was organised at INFLIBNET Centre, Gandhinagar from 5th to 7th October, 2016. Mr. Manoj Kumar K, Scientist D (CS), Convenor and Ms. Suboohi S., STO (LS), Co-Convenor coordinated the Conference. Mr. Manoj Kumar welcomed the guests and participants. Dr. Jagdish Arora delivered opening remarks and introduced services and activities of the INFLIBNET Centre. Prof. Anamik Shah, Vice-Chancellor, Gujarat Vidyapith, Ahmedabad inaugurated the programme by lighting the ceremonial lamp in presence of Dr. Nabi Hasan, University Librarian, Aligarh Muslim University, Dr. Jagdish Arora, Director, Mr. Manoj Kumar K, Scientist D (CS), Mr. H. G. Hosamani, Scientist C (LS) and Ms. Suboohi S., STO (LS), INFLIBNET Centre. In his inaugural address, he emphasized the importance of research and ETDs and also discussed the role of scientific research especially in chemistry and informed about setting-up of a unique facility i.e. National Facility for Drug Discovery Complex at Rajkot University with emphasis on industry- academic linkages for research.

Prof. Anamik Shah uploaded 1,00,000th thesis as a milestone in Shodhganga project during Inaugural Session.

Dr. Nabi Hasan delivered keynote address wherein he highlighted the process of digitisation of theses carried out at the AMU. Ms Suboohi briefed about the three days programme followed by the brief presentation by Mr. Prathap Das from ProQuest. Mr. H. G. Hosamani extended a warm vote of thanks at the end of the inaugural function.

Participants of National Conference on Electronic Thesis and Dissertation (iETD 2016) at INFLIBNET Centre, Gandhinagar

During the National Conference, technical sessions started with presentations on various topics on ETD related to the theme of the Conference i.e. "Evolving ETDs to Knowledge Repositories" including:

Topics	Name of Expert and Institution
Keynote address and digitization of theses at AMU, Aligarh	Dr. Nabi Hasan, University Librarian, Mr. Rais Ahmad Khan and Dr. Jafar Iqbal, SPA, Central Library, Aligarh Muslim University, Aligarh
Evolving ETDs in University Library, Anna University	Dr. G. Krishnamoorthy, Director, University Librarian, Mr. S. Bharanidharan and Dr. V. Rajasekar, University Library, Anna University, Chennai
Developing Institute Digital Repository at Assam University, Silchar: A Case Study	Dr. A. K. Sharma, Librarian, Assam University, Silchar
Citation Practice for Audio Video Materials and Avoiding Plagiarism	Dr. Shailesh Yagnik, Head, Library and Information Service, MICA, Ahmedabad
Managing ETD of Gujarat University: A Case study Ahmedabad	Dr. Yogesh Parikh, Librarian, Gujarat University, Ahmedabad
International ETD Programmes/Projects: An Overview	Dr. T S Kumbar, Librarian, IIT Gandhinagar
Shodhganga, A Platform for Improving Quality of Research in Indian Universities	Mr. Manoj Kumar K, Scientist D (CS), Ms. Suboohi S, STO (LS) and Mrs. Archita M, Project Officer (LS), INFLIBNET Centre, Gandhinagar
The Perceived Ease in the Adoption of Electronic Thesis and Dissertation (ETD)	Dr. Hepsibah Francis, Dr. Rama Vaidyanathan & Dr. A. Thirunavukkarasu, Dr. M.G.R Educational and Research Institute, Chennai
A Study on the Growth and Development of ETD Repositories in the University Libraries of Assam	Mr. Nitya Nanda Pathak and Ms. Konika Malakar, Gauhati University, Guwahati
National Level ETD Efforts: A Comparative Analysis	Dr. Prashant Shrivastava, Librarian, Grade-II, AIIMS, New Delhi and Dr. Dinesh K. Gupta, Professor, Dept. of Library and Information Sciences, Director (Research) Vardhaman Mahaveer Open University, Kota
Open Innovation Initiatives in India	Mr. Abhinav Jha and Dr. Kunal Sinha, Central University of Gujarat, Gandhinagar
Alternative Perspectives on Plagiarism	Ms. Astha Jaiswal, Research Student, Central University of Gujarat, Gandhinagar
A Study of Some Characteristics of Ph.D. Theses Uploaded on Shodhganga	Mr. Kumar Gandharv Mishra, M.Sc. Student, University of Delhi, Delhi
Academic Integrity and Plagiarism: A Case Study	Mr. Prakash I N, Dy. Librarian and Dr. H. R. Badrinath, Associate Professor, Alliance School of Business, Alliance University

Dr. Jagdish Arora delivered the valedictory address and distributed certificates to the participants at the end of the programme. Around 60 participants attended the programme.

Training Programme on N-LIST using A-View Classroom Software, INFLIBNET Centre, Gandhinagar, 13th October, 2016

The INFLIBNET Centre organised training programme on N-LIST using A-View Classroom Software to demonstrate e-resources available under N-LIST programme, process of joining, method of access, etc. to the students and faculty members of the Govt. E.V.P.G. College, Korba on 13th October, 2016. Ms. Kruti Trivedi, Scientist B (LS) and Mrs. Roma Asnani, STA (LS), INFLIBNET Centre were resource persons. More than 40 participants attended the programme.

10th PLANNER 2016, North Eastern Hill University, Shillong, 9th-11th November, 2016

The 10th PLANNER 2016 (Promotion of Library Automation and Networking in North Eastern Region) was organised by the INFLIBNET Centre in collaboration with North Eastern Hill University, Shillong on the theme "Disruptive Innovations for Libraries: Adopt, Adapt and Evolve" from 9th to 11th November 2016. The main theme of the convention was divided into three sub-themes, namely i) Technologies for Libraries; ii) Library Management: Collections and Human Resources; and iii) Innovative Services. The Convention was attended by more than 200 delegates and invitees from all over the country. 29 publishers participated in the exhibition arranged as part of the Convention. Out of 128 submissions, 42 papers were selected for presentation and 17 papers were selected for poster presentations.

Inaugural Session

Dr. F R Sumer, Deputy Librarian, North Eastern Hill University and Organizing Secretary for the 10th PLANNER 2016, welcomed the dignitaries on the dais as well as guests and the participants. Mr. R G Lyngdoh, Vice-Chancellor, Martin Luther Christian University, inaugurated the Convention by lighting the lamp along with Prof. Sri Krishna Srivastava, Vice Chancellor, Prof. J C Binwal, Former University Librarian, Dr. F R Sumer, Deputy Librarian, NEHU, Prof. Jagtar Singh, Head, DLIS, Punjabi University, Dr. Jagdish Arora, Director and Mr. H G Hosamani, Scientist C (LS), INFLIBNET Centre at Multi Use Conventional Hall, NEHU Campus, Shillong on 9th November, 2016.

Dr. Jagdish Arora introduced activities and services of INFLIBNET Centre briefly and highlighted the importance of disruptive technology and its application in the library. In his deliberation, Dr. Arora highlighted various activities undertaken by the INFLIBNET Centre for providing quality-based resources for promoting

Dr. F R Sumer, Deputy Librarian, Prof. J C Binwal, Former University Librarian, Prof. Sri Krishna Srivastava, Vice Chancellor, NEHU, Mr. R G Lyngdoh, Vice-Chancellor, Martin Luther Christian University Dr. Jagdish Arora, Director, INFLIBNET Centre, Prof. Jagtar Singh, Head, DLIS, Punjabi University, Mr. H G Hosamani, Scientist C (LS), INFLIBNET Centre on the Dais during the Inaugural Session

teaching-learning and research in Indian Universities in general and North Eastern Universities in particular. He congratulated all the universities located in North Eastern region of India in achieving high ranks in NIRF in comparison to other universities in India. Further, Dr. Arora apprised the guests and the audience about the e-Shodhu Sindhu, a new project initiated by INFLIBNET Centre and encouraged everyone to make use of e-resources provided by e-Shodh Sindhu.

Prof. Jagtar Singh delivered keynote address. In his address, he pointed out the role of technologies in modernisation of library activities and services. He also emphasised on the role of information literacy/digital literacy, media literacy, etc. for bridging the gap between the information poor and information rich. He stressed upon the role of libraries in materialising various issues for developing a knowledge-based society. He advocated the effective use of social media in libraries for reaching out to unreached in remote locations.

Prof. J.C. Binwal highlighted the importance of the libraries from the ancient culture to the digital age and changing role of librarianship. He emphasised on the role of libraries in bringing information seekers in touch with information sources. He also deliberated on the change of technology from web 1.0 to web 2.0 and web 2.0 to web 3.0. Prof. Binwal also touches upon various aspects embedded and blended librarianship, information literacy, knowledge management in developing knowledge based society.

Mr. R.G. Lyngdoh, in his inaugural address, appreciated INFLIBNET Centre for hosting the PLANNER Convention at NEHU, Shillong and the efforts undertaken by the NEHU Library in organising the Convention. He vividly remembered that as Home Minister of the State, he had inaugurated the 1st PLANNER Convention as the Chief Guest in the year 2005. He referred to the role of libraries in the past and in the present and mentioned that with promulgation of the technologies and its adaptability, the role of libraries has changed dramatically.

Prof. Sri Krishna Srivastava, was the Guest of Honour of the Convention. In his address, he mentioned about the disruptive technology and its impact on the library services in changing environment. He congratulated the Director, INFLIBNET Centre and his team, local organising committee headed by Dr. Sumer for organising the Convention in a conducive platform. He pointed out the dynamic changes taken place in the NEHU Library by instituting the Institutional Digital Repositories (IDR) and implementing emerging technologies in the library. Mr. H G Hosamani, Convener of the Convention extended a warm vote of thanks at the end of the inaugural programme.

Prof. J C Binwal, Former University Librarian, NEHU was the Convention Director and Dr. Manoj Kumar Sinha, Associate Professor & Head, DLIS, Assam University was the Rapporteur General.

Mr. R G Lyngdoh, Vice-Chancellor, Martin Luther Christian University released the printed Proceedings of the Convention, Souvenir and Conventional CD.

Tutorials

Convention tutorials were delivered on National Digital Library by Prof. P P Das and Dr. B S Sutradhar, IIT Kharagpur; J-Gate at e-ShodhSindhu by Informatics India; Tutorial on anti-plagiarism software: URKUND by Mr. Manoj Kumar K. Scientist D (CS),INFLIBNET Centre; and Creation institutional repositories using Dspace by Mr. Yatrik Patel, Scientist D (CS), INFLIBNET Centre.

Technical Sessions

The following theme papers were presented by invited theme speakers during the Technical Session:

Sl. No	Theme	Topic	Theme Speaker
1	Technologies for Libraries	Glimpses of Semantic Web and its Application Across Industries	Mr. Ravi Shankar Jha, Infosys Consultancy
2	Technologies for Libraries	Smart Libraries: Powering the Transition to Learning Common	Dr. Usha Munshi, Librarian, IIPA, New Delhi
3	Library Management: Collections and Human Resources	Disruptive Technology Innovations in Libraries: Impact on future Librarianship	Prof. R. N. Mishra, Prof. & Head, DLISc, Mizoram University, Aizawl
4	Innovative Services	Disruptive Innovation Services	Dr. P. Hensing, Assistant Professor, DLIS, NEHU

There were 05 technical sessions held during three days wherein 29 papers were presented on various themes as per the details given below:

Sessions	Theme	Chairperson	Co-chairman/Rapporteur	No. of Papers Presented
Session 1	Technologies for Libraries	Mr. Premchand, Librarian, IIAS, Shimla	Dr. R. K. Sharma, Librarian, UNESCO Information Centre for India and Bhutan, New Delhi	4
Session 2	Library Management: Collections and Human Resources	Dr. Ashok Rai, Scientist D (CS),INFLIBNET Centre	Dr. P.K. Deka, Librarian, K C Das College, Guwahati	4
Session 3	Library Management: Collections and Human Resources	Prof. Moses M. Naga, HoD, DLISc, NEHU, Shillong	Dr. Lalresiami, Librarian, Mizoram University, Aizawl	8
Session 4	Innovative Services	Prof. Sanjay Kumar Singh, HoD, DLISc, Gauhati University, Guwahati	Dr. Utpal Das, Librarian I/C, Dibrugarh University, Dibrugarh	5
Session 5	Innovative Services	Dr. M. N. Motebennur, University Librarian, Krishi Viswavidyalaya, Dharwad	Dr. Bikika Laloo, Associate Professor, DLIS, North Eastern HillUniversity, Shillong	4
Session 6	Innovative Services	Dr. Arun Kumar Sharma	Dr. Mukesh Saikia, Librarian, Tezpur University, Tezpur	4

Participants of the Convention

Panel Discussion

A panel discussion on the theme of the Convention "Disruptive Innovations for Libraries: Adopt, Adapt and Evolve" was organised prior to the concluding session of the Convention. Prof. A.S. Chandel, Librarian I/C, Sikkim University was the Chairman of the Panel Discussion. Prof. R.N. Mishra, DLISc, Mizoram University, Prof. Manas Ranjan Mahapatra, IPR-NEC, Dr. R.K. Mahapatra, Tripura University, Ms. Karen Donogue, Assistant Professor, Dept of Mass Communication were the panalist of the panel. Prof. A.S. Chandel welcomed the panelists and participants. Thereafter, the panelists deliberated and discussed on emerging issues on the themes of the Convention. Prof. Chandel advocated for implementation of ICT tools and techniques in libraries. He cited the example of extensive use of CDS/ISIS software developed by UNESCO for various library-related activities in nineties. He emphasised on the development of new ICT gadgets, emergence of Internet and WWW, social media, web technology and transition of library from Library 1.0 to Library 2.0 and switching over to Library 3.0, web enabled services, development of applications for hand held devices like smart phones/mobile, tablets to access Internet resources.

Dr. Manas Ranjan Mahapatra deliberated on perception of users about libraries and library services. He emphasized that the library is treated as a communication centre and centre for cultural and national heritage preservation, cultural activities and discourses. Prof. R.N. Mishra also highlighted the need for implementing innovative disruptions. He also advocated for maintaining the present library automation activities side-by-side before fully implementing the disruptive innovations. He suggested the use of disruptive technology for innovative library activities and services. He said that the library should work to get return on investment (ROI) for the libraries which would come from our research scholars and faculty members in terms of increased research publications output. Dr. R.K. Mahapatra emphasized on the need for manpower training and skill development. He also praised the initiatives taken by the INFLIBNET Centre for colleges and universities in the North-Eastern States.

Ms Karen Donogue discussed various disruptive innovations that are in vogue in library and media. She also emphasized that professionals from library science, information science, media / communication science should come closer and work together.

Valedictory Session

Mr. Hiteshkumar Solanki, Scientist B (CS), INFLIBNET Centre and Co-Convener of the Convention, delivered welcome address. Prof. J. C. Binwal, Convention Director summed up the three days' convention and expressed his pleasure on grand success of the Convention. Dr. Manoj Kumar Sinha, Associate Professor & Head, DLISc, Assam University and Rapporteur General of the Convention, extended his sincere thanks to the organisers for giving him the responsibility of Rapporteur General in this convention.

Dr. Jagdish Arora, Director, INFLIBNET Centre congratulated all the members of the Organising Committee for organising the event meticulously. He extended his sincere thanks and gratitude to the Hon'ble Vice-Chancellor, Prof. S.K. Srivastava for hosting the event. He, on behalf of INFLIBNET Centre, felicitated all the members of the Local Organising Committee, staff of INFLIBNET Centre for their excellent work for organising the three days' event. Prof. R.P. Mishra, Dean, School of Economics, Management, Information Science & Communication, NEHU appreciated all the efforts of the Central Library and Dept. of Library and Information Science, NEHU, & INFLIBNET Centre for organising such a wonderful mega event in NEHU Campus. Dr. F. R. Sumer extended warm vote of thanks at the end of the Convention.

Recommendations

The following major recommendations were made during the deliberations of the convention:

- Adequate financial assistance should be provided to the colleges and universities to develop and maintain well equipped ICT laboratories, digital libraries, Internet access / e-resources access points in coming XIIIth Five Year Plan period;
- Organise more training programmes for the LIS Professionals of North-Eastern Region under the capacity building programme for new generation LIS professionals;
- Designate INFLIBNET Centre as the National Training Agencies for Library and Information Science professionals, Computer Science personals, Media personals with full time faculty and infrastructure for organising continuous Refresher / Orientation Programme, Training Programmes, Workshops, Seminars, Conferences, etc.;
- Introduce disruptive innovations in Libraries to address the needs of new generation library users; and
- INFLIBNET Centre should be given the responsibility to develop state-of-art ICT infrastructure with arrangement of adequate learning resources to the Public, Special and Academic (School, College and University) Libraries.

Two-day National Workshop on Capacity Building of LIS Professionals in Using Open Journal System (OJS) for e-Publishing, Tata Institute of Social Sciences, Mumbai, 18th-19th November, 2016

Participants of National Workshop on Capacity Building of LIS Professionals in Using Open Journal System (OJS) for e-Publishing at Tata Institute of Social Sciences, Mumbai

Two-day National Workshop on Capacity Building of LIS Professionals in Using Open Journal System (OJS) for e-Publishing was jointly organized by Centre for Library and Information Management Studies (CLIMS), Tata Institute of Social Sciences, Mumbai and INFLIBNET Centre, Gandhinagar from 18th to 19th November, 2016. The purpose of the Workshop was to develop expertise by providing a thorough training and hands-on experience on Free and Open Source Software (FOSS) in general and particularly on e-publishing platform, Open Journal System (OJS). This Workshop intended to equip participants with skills for developing their own e-publishing platform through intensive hands-on training sessions by experts in the field. A unique website developed to promote the online workshop with online registration and payment facilities. Around 30 participants including LIS professionals, Content Manager, Senior Executives in private organisation to R&D institutions across the country. Dr. Mallikarjun Angadi, Chairperson, CLIMS, TISS coordinated the programme and welcomed the guests and participants. Prof. Surinder Jaswal, Deputy

Director, Tata Institute of Social Sciences, Mumbai inaugurated the Workshop. In her inaugural address, she said that TISS, as one of the premier institutes in the country, has always responded to the needs of the society in terms of offering quality higher education to the pupils. She wished all the participants to gain as much knowledge as possible from this unique Workshop and assured all possible help to conduct many more such workshops useful to LIS professionals in future. Prof. M Mariappan, Chairperson, Centre for Hospital Administration, School of Health System Studies, TISS was the Chief Guest for the concluding and certificate distribution function. Dr. Mallikarjun Angadi, Chairperson, CLIMS, Dr. J. Shivarama, Asst. Professor, CLIMS and Mr. Gaurav Prakash, Scientist B (CS), INFLIBNET Centre were the resource persons. Around 30 participants participated in the Workshop.

Two-day National Workshop on Content Management Systems and Library Software Applications, Sikkim University, Gangtok, 28th -30th November, 2016

Two-day National Workshop on Content Management Systems and Library Software Applications was organised by Sikkim University in collaboration with INFLIBNET Centre, Gandhinagar at Teesta-Indus Central Library, Sikkim University, Gangtok from 28th to 30th November, 2016. Prof. A S Chandel, Librarian coordinated the programme. Ms. Sarbada Pradhan, Assistant Librarian delivered welcomed address. Prof. T B Subba, Vice-Chancellor inaugurated the programme in the presence of Mr. T K Kaul, Registrar, Dr. Debashish Chawdhury, Controller of Examinations, Prof. A S Chandel, Librarian, Sikkim University and Dr. Miteshkumar Pandya, Scientist B (LS), INFLIBNET Centre, Gandhinagar. In his inaugural address, he emphasized that useful contents should be created and made available for wider accessibility and also stated that technology is a tool and should be used only as a tool. Prof. A S Chandel, in his introductory address, emphasized the need of organising this workshop for library professionals of the state to update them with the advances in information technology and thanked Director, INFLIBNET for sponsoring this Workshop. He highlighted the importance of creation of digital resources in the present digital era that needs concerted efforts by various institutions.

Participants of National Workshop on Content Management Systems and Library Software Applications, Sikkim University, Gangtok

On this occasion, Prof. T B Subba, Vice-Chancellor launched Library Website developed using Wordpress, an open source CMS platform, designed by Mr. Adip Tirwa, Technical Assistant, Central Library, Sikkim University under the guidance of the Librarian. Dr. Miteshkumar Pandya, Scientist B (LS), INFLIBNET Centre was the resource person. He made presentation on Joomla and INLFIBNET's Activities and Services. Around 37 participants from different cities of Sikkim participated in the programme. Mr. Manish Soni, Information Scientist, Sikkim University extended a warm vote of thanks.

In the valedictory Session, Mr. Jitendra Singh Raje, IAS, Director, Higher Education, Govt. of Sikkim was the chief guest. In his address, he talked on importance of e-content and content creation. He also mentioned that he would initiate advanced library system in colleges of Sikkim very soon. He further appreciated the remote access service provided by Central Library, Sikkim University to the affiliated colleges of Sikkim.

Three-Day Advanced Training Programme on Shodhganga, INFLIBNET Centre, Gandhinagar, 14th-16th December, 2016

Three-day Advanced Training Programme on Shodhganga was organised at INFLIBNET Centre, Gandhinagar from 14th to 16th December, 2016. Mr. Manoj Kumar K., Scientist D (CS) and Ms Suboohi S, STO (LS) coordinated the programme. Prof. Krishna Amin-Patel, Centre Head, PG Campus, National Institute of Design (NID), Gandhinagar inaugurated the programme by lighting the ceremonial lamp. In her inaugural address, she emphasized the importance of research and ETDs and plagiarism detection software and services provided by the INFLIBNET Centre. Mr. H. G. Hosamani, Scientist C (LS) extended warm vote of thanks. Around 25 participants participated in the workshop. The Workshop covered theoretical and practical sessions on the following topics related to Shodhganga:

Topics	Name of Expert and Institution
International ETD Programmes/ Projects: An overview	Dr. T. S. Kumbar, Librarian, IIT Gandhinagar
Introduction to Shodhganga/ Shodhgangotri and Overview of UGC Guidelines	Mr. Manoj Kumar K, Scientist D (CS), INFLIBNET Centre
Standards and Formats for Digitization	Mr. Manoj Kumar K, Scientist D (CS), INFLIBNET Centre
Introduction to DSpace and Building IR	Mr. Swapnil Patel, Scientist B (CS), INFLIBNET Centre
Institutional Repositories (IR) and Altmetrics	Mr. Pallab Pradhan, Scientist B (LS), INFLIBNET Centre
Implementation of National Federated Access Management Solution for Consortium based Access to E-Resources	Mr Raja V., Scientist B (CS), INFLIBNET Centre
Anti-Plagiarism Tools and Services and Hands on	Ms. Suboohi S, STO (LS), INFLIBNET Centre

Dr. Kumud Sharma, University of Delhi, Dr. (Mrs.) Pankaj Mittal, Additional Secretary, UGC, Prof. Ram Bux, Department of Hindi, Jawaharlal Nehru University, and Dr. Jagdish Arora, Director, INFLIBNET Center on the Dais during Valedictory Function of Advanced Training Programme on Shodhganga at INFLIBNET Centre

In the valedictory function, members of the Hindi Samiti were invited as special guests for the programme. Dr. (Mrs.) Pankaj Mittal, Additional Secretary, UGC and Former Vice Chancellor, B.P.S. Mahila Vishwavidyalaya delivered the valedictory address and along with Prof. Ram Bux, Department of Hindi, Jawaharlal Nehru University (JNU), Dr. Kumud Sharma, University of Delhi and Dr. Jagdish Arora, Director, INFLIBNET Centre. The invited guests distributed certificates to the participants at the end of the programme.

Three-day National Workshop on Data and Statistical Analysis using R Programming INFLIBNET Centre, Gandhinagar, 19th – 21st December, 2016

Three-day National Workshop on Data and Statistical Analysis using R Programming was organised at INFLIBNET Centre, Gandhinagar from 19th to 21st December, 2016. Mr. Hitesh Solanki, Scientist B (CS), Mr. Divyakant Vaghela, Scientist B (CS) and Mr. H G Hosamani, Scientist C (LS) coordinated the programme. Dr. Jagdish Arora, Director lighted the ceremonial lamp along with Mr. Manoj Kumar K., Scientist D (CS), Mr. Hitesh Solanki, Scientist B (CS), Mr. Divyakant Vaghela, Scientist B (CS), INFLIBNET Centre during the inaugural function. The aim of this Workshop was to provide basic training in understanding the concepts in data science and statistical analysis using R programming. The R programming language is one of the most widely used programming languages among the data scientists and researchers. It is open source software and allows integration with other applications. Following theoretical sessions were conducted during the Workshop:

Topics	Name of Expert and Institution
INFLIBNET Activities and Service	Mr. Yatrik Patel, Scientist D (CS), INFLIBNET Centre
Introduction to R programming (Installation, getting Started R, Tinn-R, Rcommander, RStudio)	Mr. Divyakant Vaghela, Scientist B (CS), INFLIBNET Centre
Data Types in R (Constants, vectors, matrix, dataframes, lists)	Ms. Mitisha Vaidya, Project Officer (CS), INFLIBNET Centre
Importing and handling data in R	Mr. Hitesh Solanki, Scientist B (CS), INFLIBNET Centre
Introduction to R programming (Working with functions, summary measures)	Dr. R. D. Chaudhari, Associate Professor, M G Science Institute, Ahmedabad
Statistical Analysis using R (Hypothesis Testing: Parametric and Non-parametric)	Dr. Dharmesh Raykundaliya, Assistant Professor, Sardar Patel University, Anand
Statistical Analysis using R(Correlation and Linear Regression Modelling)	Dr. R. D. Chaudhari, Associate Professor, M G Science Institute, Ahmedabad
Statistical Analysis using R (Probability Distributions) Sardar	Dr. Dharmesh Raykundaliya, Assistant Professor, Patel University, Anand
Statistical Analysis using R (Analysis of Variance : Linear Model)	Dr. Dharmesh Raykundaliya, Assistant Professor, Sardar Patel University, Anand
Data visualization using R : Base, lattice and ggplot packages	Dr. R. D. Chaudhari, Associate Professor, M G Science Institute, Ahmedabad
Reproducible research using R and Rstudio (knitr and markdown packages)	Dr. R. D. Chaudhari, Associate Professor, M G Science Institute, Ahmedabad

Mr. Hitesh Solanki and Mr. Divyakant Vaghela, Scientists B (CS), Ms. Mitisha Vaidya, Project Officer (CS) and Ms. Tulsi Punjani, Project Assistant (Statistics) were resource persons in practical sessions of the training programme. The certificates of participation were distributed at the end of programme. Around 20 participants including IT professionals, LIS professionals and research scholars attended the programme. Mr. H. G. Hosamani, Scientist C (LS) extended a warm vote of thanks at the end of the Workshop.

E-Content Development / Meeting /Workshop under e-PG Pathshala

Meeting of Reviewer under the subject 'Sociology', INFLIBNET Centre, Gandhinagar, 29th November, 2016

The INFLIBNET Centre organised meeting of Reviewer, to review the modules and video recording of MOOCs Course of the papers under the subject Sociology on 29th November, 2016. Mr. Abhishek Kumar, Scientist C (CS), INFLIBNET Centre briefed about the activities to be carried out by the reviewer to convert the ePG Pathshala e-Content into MOOCs courses. E-text and self-assessment of papers reviewed by PI, Prof. Sujata Patel, Department of Sociology, University of Hyderabad, Hyderabad.

Video Conferencing Meeting for SWAYAMPRABHA, MHRD, New Delhi, 22nd December, 2016

The Ministry of Human Resource Development conducted video conferencing meeting to discuss the framework of the project SWAYAMPRABHA along with IIT Madras, Jamia Milia Islamia University, New Delhi and INFLIBNET Centre, Gandhinagar on 22nd December, 2016.

Video Conferencing Meeting for SWAYAMPRABHA

Navratri

The INFLIBNET Centre celebrated Garba festival with great enthusiasm. The Garba night was organized for its employees and their families on 7th October 2016. The function started with Durga Puja and everyone from the campus, staff member and their families participated. The employees and their families turned out in their best traditional attire. Dr. Jagdish Arora, Director, INFLIBNET Centre distributed the prizes for the best dance performers, best-dressed persons and children. The function concluded with the ceremonial dinner.

Navratri @INFLIBNET Centre

Joomla: An Open Source Content Management System

Content Management System allows user to create and edit web content without knowing web scripting language and backend database. It support feature called "What You See is What You Get" (WYSIWYG), which means that the content which is displayed in the editor would have the same look and feel for the end-users interface. In most content management system WYSIWYG editor is available, which allows user to manage their content without having programming expertise.

Joomla is an open source software which is one of the most advanced content management systems. It is distributed under the terms of the GNU General Public License (GPL). It could be easily managed by the person with low technical background. A person having basic knowledge of HTML and CSS can also work efficiently on Joomla CMS. It is being used to create a professional portal/website with good look and feel without having operating knowledge of computer compared to other CMS platforms. Every CMS has its own terminology to describe various functions knitted in a specific sequence.

It can easily be one of the best choices for creating integrated digital frameworks required for showcasing the libraries activities. One can extend it with different add-ons or modules which are available free of cost. It has the ability to change the theme based on the user's requirement. This enables website creator to enhance the presentation of the website. Joomla distributions are bundled, one can use it as kit for starting the development and various components can be used to enhance Joomla's core abilities. It is also powerful, scalable and sophisticated CMS (Content Management System) for building and managing template based websites/portals. The web based and menu-driven interface allows users to create contents without any limitations. Joomla allows user to create content in the form of articles and that can be assigned with a menus. Joomla also has various modules which can be integrated with its core setup. Developers of the Joomla have also contributed language independent modules for non-English languages which can be customized.

Users can create their content in the form of articles. The word "article" is used to describe the content of a unit that is created in Joomla. An article, however, could be a complete description of a concept, or just a single page of content. The articles are used to encourage creation of smaller, more manageable units of electronic content/information, perhaps focused on a small number of sub-topics. These articles could be linked with various menus which are visible in the user interface/website.

Joomla, basically, deals with content that includes textual material, multimedia, presentations, etc.

Pre-requisites

Following pre-requisites software are required before installing Drupal:

- Windows or Linux OS
- HTTP Web Server (Apache Web server or IIS)
- PHP 5.0.4 +
- MySQL - 4.1.10 +

Technical Features

- Software is capable to develop web portals;
- It has powerful media manager which can be used to manage multimedia and image files;

- It can be customized with dynamic themes available at no cost;
- Joomla uses Bootstrap 3 for creating responsive web portals;
- It uses PHP as scripting language, MySql as database and Apache as web server;
- Web based interface for in-house operations;
- It has extensive control panel/dashboard for creating and managing contents and menus;
- It also facilitates integration of external payment gateway module for the portals which are dealing with online payments;
- The software has inbuilt Banner Manager which provides facility to change or manage banners as per the requirement;
- Components are available free of cost to enhance the core of Joomla;
- It has a feature called 'search better search smarter' which provides facility to search within the website;
- In case, user is not able to categorise the content, they can use tagging option available for distinguishing the content;
- Access Control List allows users to manage the users of their website, and different groups;
- Supports Unicode standard for multi-lingual contents; and
- Flexibility of database structure.

Content Licensing - As stated above, Joomla is released under GNU General Public License and Joomla's online documentation is compiled by individual contributors which are available in open domain with Joomla! Electronic Documentation License (JEDL).

Future Developments

Developers of the Joomla are committed to enhance its features and functionalities with the changing needs of the community. As and when new development takes place in the field of website development, the software is being updated accordingly.

Joomla Themes - A theme manager is an integral part of the core instance of Joomla. It allows content authors to have control over the look and feel of the content that they create. There are many websites that provide version wise templates/themes for Joomla.

User Forum and Support

Joomla software is most widely used open source software for creating websites and portals. It offers solution to various problems occurred while using through community forum. User can register themselves and raise their questions to get possible solution of the query. One can register his email ID at https://forum.joomla.org/ to get email alerts from the active users.

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Article

Science Mapping and Visualization Tools used in Bibliometric & Scientometric Studies: An Overview

Pallab Pradhan, Scientist B (LS)

Science mapping and visualization techniques are used for data analysis in bibliometric and scientometric studies. Science mapping and visualization helps to explore the scientific knowledge, make it livelier by visualizing and showcasing the impact of research by displaying the structural relationship and dynamics of scientific research domains. Various software tools have been developed incorporating different science mapping and visualization techniques. This article briefly presents features and functions of such software tools used for data analysis in bibliometric and scientometric studies.

1. Introduction

In the fastest growing technological world of information communication technology & scientific research and development, an overwhelming amount of information / data in various formats is generated directly or indirectly. As far as academic and scientific community is concerned, a large number of scholarly articles are being published on daily basis by research scholars and academician across the world. Bibliometric and scientometric analysis, science mapping and visualization techniques are used to understand the evolution of scientific knowledge, intellectual concepts, social structures, inter-connections and inter-relationships of thousands of, millions of scholarly articles. Bibliographies, references and citation data retrieved from databases like Google Scholar, Web of Science and Scopus are used to conduct such analysis and studies to measure the scientific productivity, and to analyse impact of scientific research embedded in research articles.

According to Encyclopaedia of Information Science and Technology, IGI Global: "Science mapping is the development and application of computational techniques to the visualization, analysis, and modelling of a broad range of scientific and technological activities as a whole". Mapping of science is nothing but to represent complex, abstract or raw data in a visually understandable format. Mapping of science helps to clearly understand the concepts of science, making them more lively visible and concrete. The fundamental principle of science mapping is to represent the body of scientific literature in a tangible form so that one can handle it more effectively. A science map provides an overview of the scientific landscape which can be used to support exploration, description, or explanation of the state and development of scientific knowledge and practices. Citations provide insights into value of published article by the scientific community.

The workflow of science mapping consists of a number of steps including data retrieval, pre-processing, network extraction, normalization, mapping, analysis and visualization. At the end of this process, the analyst has to interpret and obtain some conclusions from the results (Cobo et al., 2011).According to Tech Target, "Data visualization is a general term that describes any effort to help people understand the significance of data by placing it in a visual context. Patterns, trends and correlations that might go undetected in text-based data can be exposed and recognized easily with data visualization software.

Bibliometrics / Scientometrics involve quantitative studies of scientific literatures. These studies include

topics like data analysis, science mapping, and visualization, etc. The Online Dictionary of Library and Information Science (ODLIS) defines Scientometrics software as set of computer based programs, designed and developed to analyse citation based bibliographic data as input to perform the specific tasks i.e. structural analysis of scholarly communication, mapping of scientific research, creation of metrics based social maps, information representation and organisation, visualisation of research, micro level analysis (co-word, co-author, cited references, bibliographic coupling, co-citation) etc. as output (Kumar, Shivarama, &Choukimath, 2015).

There are a number of science mapping and visualization software tools specifically used in bibliometric &scientometric studies available free of cost on the Internet. Most of these software tools are based on modern mathematical algorithms, statistical methods, graphs theory, sophisticated networks theory and visualization techniques, etc. This article briefly elaborates features and functions of software tools available for science mapping and visualization.

2. Bibliometric & Scientometric Analysis, Science Mapping, and Visualization Software Tools

2.1 BibExcel

Bibexcel is a versatile bibliometric toolbox developed by Olle Persson, Department of Sociology, Umea University, Umea, Sweden. BibExcel is specifically designed to assist a user in analysing bibliographic data, or any data of textual nature formatted in a similar manner. The idea is to generate data files that can be imported to Excel, or any program that takes tabbed data records, for further processing. BibExcel can read data retrieved from different bibliographic sources, such as ISI Web of Science (WoS), Scopus in Procite export format, also it can convert to other formats. In Bibexcel, it is possible to do most types of bibliometric analysis, e.g. bibliometric, citation analysis, co-citation, shared references, bibliographic coupling, cluster analysis, prepare bibliometric maps for mapping with Pajek, NetDraw.

This tool-box includes a number of tools, some of them visible in the window interface and others hide behind the menus. Many of the tools can be used in combination to achieve the desired result. The program offers a high degree of flexibility to the users in both data management and analysis which is one of the real strengths of this tool. Bibexcel allows easy interaction with other software, e.g. Pajek, Excel, SPSS, etc. BibExcel can produce net-files for co-authorships, co-citations etc, and then convert these files for further analysis and visualization with Pajek. BibExcel can also make clu-files and vec-files for Pajek which is freely available on the net.

BibExcel is a free-ware for academic and non-profit use. The software can be downloaded from http://homepage.univie.ac.at/juan.gorraiz/bibexcel/.

2.2 BiblioTool

BiblioTools 2.2, is a set of python scripts developed by Sebastian Grauwin for transforming raw bibliographic data as extracted from the Web of Science into “maps of science” gathering relevant information about millions of articles in a single picture. These scripts are designed to be used as a black box, i.e. no prior knowledge of python is required for using them. However, user is free to change the codes if they want to which should help them to generate their own desired “maps of science”.

BiblioTools1.0 was first released in 2011 based on SQL queries. Further, in July 2012, BiblioTools 2.1 was released based on python scripts with updates and corrections in years 2012 and 2014. User can download BiblioTools 2.2 file, unzip it and place the unzipped folder wherever they want to install. The BiblioTools scripts have been heavily tested on Unix, Mac and Windows. In order to run them, user need to be able to

run python and need to have the following packages installed: argparse, numpy, matplotlib, networkx. BiblioTools 2.2 can be downloaded from: http://www.sebastian-grauwin.com/?page_id=427.

User need to have an access to the Web of Science to extract bibliographic data, gephi to open and visualize the different maps produced by the scripts, and a latex compiler to visualize some tables produce by the scripts in pdf format. BiblioTools 2.2 can perform various bibliometrics related exercises, e.g. data parsing, filtering, detecting bibliographic coupling communities, co-occurrence maps, etc.

2.3 CiteSpace

CiteSpace is a freely available Java application developed by Chaomei Chen, College of Information Science and Technology, Drexel University, Philadelphia, USA for progressive knowledge domain visualization and analyzing trends and patterns in scientific literature. It helps to conduct interactive visual analytic studies of scientific literature concerning a scientific field, a discipline, or an institution, and identify and interpret salient patterns and trends.

CiteSpace provides various functions to facilitate the understanding and interpretation of network patterns and historical patterns, including identifying the fast-growth topical areas, finding citation hotspots in the land of publications, decomposing a network into clusters, automatic labelling clusters with terms from citing articles, geospatial patterns of collaboration, and unique areas of international collaboration. CiteSpace supports structural and temporal analyses of a variety of networks derived from scientific publications, including collaboration networks, author co-citation networks, and document co-citation networks. It also supports networks of hybrid node types such as terms, institutions, and countries, and hybrid link types such as co-citation, co-occurrence, and directed citing links.

The primary source of input data for CiteSpace is the Web of Science. CiteSpace also provides some simple interfaces for obtaining data from PubMed, arXiv, ADS, and NSF Award Abstracts. CiteSpace can be used to generate geographic map overlays viewable in Google Earth map based on the locations of authors.

CiteSpace software is freely available. The current version of the software is 5.0.R3 SE. As CiteSpace is a Java application, user need to make sure that their computer supports Java, including Windows, Linux or Mac, and Java Runtime (JRE) is installed on computer. It is currently optimized for Windows 64-bit Java 8 (i.e. Java 1.8) and can be downloaded from: http://cluster.ischool.drexel.edu/~cchen/citespace/download/.

2.4 CitNet Explorer

CitNetExplorer is a Java based software tool developed by Nees Jan van Eck and LudoWaltman at Centre for Science and Technology Studies (CWTS), Leiden University, Netherlands. It is a software tool for visualizing and analyzing citation networks of scientific publications. The tool allows citation networks to be imported directly from the Web of Science database and can be exported in the popular Pajek file format. Citation networks can be explored interactively by using zoom and scroll functionality, for instance by drilling down into a network and by identifying clusters of closely related publications, direct and higher-order indirect citation relations.

CitNetExplorer is freely available for non-commercial research and teaching purposes, and distributed under a non-commercial research and teaching license. CitNet Explorer version 1.0.0, released on March 10, 2014, can be downloaded from: http://www.citnetexplorer.nl/download. To run CitNet Explorer, user need to install Java version 6 or higher in their system.

2.5 VOSviewer

VOSviewer is a free Java based program, primarily developed by Nees Jan van Eck and Ludo Waltman at Centre for Science and Technology Studies (CWTS), Leiden University, Netherlands. It is a software tool for constructing and visualizing bibliometric networks. These networks may for instance include journals, researchers, or individual publications, and they can be constructed based on co-citation, bibliographic coupling, or co-authorship relations. VOSviewer also offers text mining functionality that can be used to construct and visualize co-occurrence networks of important terms extracted from a body of scientific literature.

VOSviewer provides a number of advanced features for creating bibliometric networks (e.g., co-authorship, bibliographic coupling, and co-citation networks). For instance, the influence of publications with many authors, many citations, or many references can be reduced using a fractional counting approach. Data cleaning can be performed using thesaurus files. Co-authorship networks, co-occurrence networks, and citation-based networks can be created directly based on Web of Science, Scopus, PubMed, and RIS files. Networks can be imported from and exported to Pajek network files and GML files. Natural language processing techniques are inbuilt in the software for creating term co-occurrence networks based on English-language textual data. Also, state-of-the-art techniques for network layout and network clustering are available in the software. Visualizations of bibliometric networks can be explored in full detail using zoom and scroll functionality.

The software is freely available to use for any purpose. VOSviewer version 1.6.5, released on September 28, 2016, can be downloaded from: http://www.vosviewer.com/download. To run CitNetExplorer, user need to have Java version 6 or higher installed in their system.

2.6 CopalRed

CoPalRed is a Knowledge System developed by Rafael Bailón-Moreno at EC^3 Research Group at Department of Chemical Engineering. University of Granada, Spain in 2003. CoPalRed collects the information contained in the databases, e.g. WOS, Scopus, MedLine, ProCite, etc. and transforms it into new knowledge, which was not explicit in the information contained in the databases, but is generated from the information contained therein. Since July 2011, CopalRed has changed its name to Techne Co Word, since it continues its development under the cover of the research group "Techne, Knowledge and Product Engineering". Its current stable version is 2.0 released in July, 2011. It works only on Windows operating system.

CopalRed, as a knowledge system, consists of mainly four modules, i.e. information capture, information debugging, knowledge base generation, and knowledge management module.

CoPalRed is mainly able to perform three types of analysis:

- Structural analysis: It reveals the network structure of the scientific field under study, defining the actors and their relationships.
- Strategic analysis: It places each actor in a relative position within the network, defining it according to the intensity of its external relations (centrality) and according to its internal cohesion (density).
- Dynamic analysis: It analyzes the transformations (translations-translations) of the actors over time. Identifies approaches, bifurcations, appearances and disappearances of the actors.

CoPalRed generates two types of outputs of knowledge:

- Specific outputs that can be displayed on screen, printed or saved; and
- Compatible standard outputs which are a set of reports with content similar to the specific outputs,

but with the particularity of being presented in formats compatible to Microsoft Word and Microsoft Excel.

CopalRed's knowledge management module is capable of performing various bibliometrics functions including drawing networks and exporting them to any image editor, rotating them, changing thresholds, Bradford distributions, Lotka distributions, affiliations, bibliographies, ranking of documents by relevance, and so on in any combination of themes or subnets.

2.7 CRExplorer

The CRExplorer is a new software based on the programs provided at Loet Leydesdorff's homepage athttp://www.leydesdorff.net/software/rpys/.The developers of CRExplorer are Andreas Thor, Werner Marx, Lutz Bornmann (Germany) and Loet Leydesdorff, (The Netherlands). The CRExplorer uses data from Web of Science or Scopus databases as input. User needs to download publication sets including the references cited to analyse in CRExplorer. The program focusses on the analysis of the cited references, in particular on the referenced publication years. When the aggregated citations are plotted along the time axis, one obtains a "spectrogram" with distinct peaks. CRExplorer visualizes this spectrogram, cleans the cited references (called "disambiguation"), and uses a smoothening algorithm to suppress the noise. The CRExplorer uses the Reference Publication Year Spectroscopy (RPYS) method which was developed by Werner Marx, who used it for the first time in the field of meteorology.

CRExplorer requires a system with Java 8 support (Java Run Time) to run. There are two options to run CRExplorer:

- Java Web Start: Click the CRExplorer Start link to launch CRExplorer directly from this web page using Java Web Start Launcher.
- Download: You can download a runnable JAR file. On most systems, a double click on the JAR file will start CRExplorer.

The last version of CRExplorer 1.6.8 was released on August 29, 2016. This software has different features, such as:

- It reads files from Scopus. The file format "CSV" (including citations, abstracts and references) downloaded from Scopus.
- CRExplorer exports files in the Web of Science and Scopus format. These files can be imported in other bibliometric programs (e.g. VOSviewer).
- Internal file format: working files are/can be saved in the internal file format "*.cre".
- Co-citation for cited references which are co-cited in a specific publication and data clustering.

2.8 Inter Disciplinary Research (IDR) Toolkit

The IDR toolkit offers a novel tool, the overlay maps of science, as a method to explore the degree of interdisciplinary of a set of publications. It was developed by Dr. Alan Porter andDr. Ismael Rafols.The overlay technique visualizes the spread of publications over the global map of science, i.e. the structure of science as obtained from the analysis of cross-citations between disciplines. It follows the method introduced in Rafols & Meyer (2010) to create the overlay map on the basis of a global map of science. It helps to visually locate bodies of research within the sciences, both at each moment of time and dynamically. A user has to rely on access to the Web of Science to obtain the set of Web of Science Categories (WCs) for a given set of articles and the files available in mapping kit (also available at http://users.fmg.uva.nl/lleydesdorff/overlaytoolkit/). The objective is to obtain the set of Web of Science Categories (WCs) for a given set of articles; provide this to network software; and output overlay information to add to a suitable basemap using Pajek and/or VOSviewer.

The analysis can be carried out at different units of aggregation in IDR: for example, for a university or corporation, for a research topic, or for a research programme or funding agency. By locating the publications over the map of science, user can gain an understanding of the diversity of disciplines involved. Since attribution of publications to disciplines is problematic and controversial, the overlay maps are only reliable with large numbers. In IDR, a user need to have a set of at least 70 publications for an exploratory map, but for accurate representations, it is recommended to have above 1,000 publications.

The maps allow one to intuitively perceive various aspects of disciplinary diversity. First, the number of disciplines involved. Second, the balance of disciplines, i.e. whether publications are evenly distributed or some disciplines are predominant. Third, and crucially, the cognitive distance between the disciplines involved –whether the research investigated covers disparate or cognate areas of science. This aspect of disparity is a key advantage of the maps: they differentiate between short-range interdisciplinarity (e.g. chemistry and physics), or long-range interdisciplinarity (e.g. social science and biology). Measures of interdisciplinarity can be associated with these maps.

2.9 IN-SPIRE

IN-SPIRE™ Visual Document Analysis, a powerful information visualization software is developed by Pacific Northwest National Laboratory with assistance from U.S. Department of Energy. It is designed to help analyst to uncover relationships, trends, and themes hidden within data which can lead to new knowledge and new insights that could be used to assess terrorist threats, determine how to treat a medical condition, or gather market research on the competition and many more.

IN-SPIRE™ can quickly and automatically convey the gist of large sets of unformatted text documents such as technical reports, web data, newswire feeds and message traffic. IN-SPIRE™ can handle real-time data by adding new documents as they arrive. It also processes foreign language data and provides robust support for translation. By clustering similar documents together. This Windows-based software unveils common themes and reveals hidden relationships within the collection.

IN-SPIRE™ analyses a multitude of text files and determines key topics or themes in each to create a signature for each document in the collection. IN-SPIRE's two main visualizations display representations of the documents in which those with similar or related topics appear closer together. The Galaxy visualization uses the metaphor of the stars in the night sky with each star representing an individual document. The ThemeView™ visualization uses a 3-dimensional terrain map display to provide a high-level overview of the data. The Search tools in IN-SPIRE™ support simple queries, phrase queries, and queries with example text. Other tools help to explore trends over time and relationships between concepts.

IN-SPIRE™ has in-built algorithms to perform various analyses, such as:

- Entity Extraction: IN-SPIRE comes bundled with an entity extractor that extracts People, Organizations, Locations, E-mail addresses, web addresses, and more.
- Automatic Keyword Extraction: Essential keywords and phrases are now automatically identified and extracted when documents are processed by IN-SPIRE, enabling keywords and phrases such as "united states", "supreme court", and "pope benedict."
- Themes: Keywords and phrases are grouped into themes based on their co-occurrence within documents in a dataset.
- Surprising Terms: The Time tool's terms view uses a new algorithm to analyze change in term

frequency over time. All terms in the document content are analysed to find those with interesting spikes in frequency.

IN-SPIRE™ is a licensed commercial software. It mostly operates on Windows workstations and Servers. A typical IN-SPIRE computer would include a 1.5 Ghz processor, 2Gb of memory, and 200 Gb disk drive in which about 20-50 Gb should be available to store the program and associated datasets. The latest version of IN-SPIRE is version 5.9.

2.10 HistCite

HistCite is a software package used for bibliometric analysis and information visualization. It was developed by Eugene Garfield, the founder of the Institute for Scientific Information (ISI). It is a software developed to allow the users to aid researchers in visualizing the results of literature searches in the Web of Science. HistCite let the users analyze and organize the results of a search to obtain various views of the topic's structure, history, and relationships. It is easy, fast, and provides perspectives and information not otherwise available.

HistCite helps the user to analyse:

- How much literature has been published in a specific field? When and in what countries has, it been published? What countries are the major contributors to that field? What are the languages most frequently used by the items published in that field?
- What journals cover the literature of the field? Which are the most important?
- Who are the key authors in that field? What institutions do these authors represent?
- Which articles are the most important?
- How have the various contributors to the field influenced each other?

In regards to information visualization, HistCite performs one specific application that it converts bibliographies into diagrams called historiographs.

HistCite operates on Windows computers with Internet Explorer. The latest version of HistCite is version 12.3. A free copy of HistCite software can be downloaded from: http://interest.science.thomsonreuters.com/forms/HistCite/ by agreeing to an End User License Agreement provided by Thomson Reuters, now a part of Clarivate Analytics.

2.11 Loet Leydesdorff's Software

Leydesdorff's software is a set of command-line DOS based programs to analyse and evaluate bibliometrics data obtained from the data sources such as Scopus, Web of Science, and Google Scholar. The set of software / programs were developed by Loet Leydessorff at Science & Technology Dynamics, University of Amsterdam, Amsterdam School of Communications Research (ASCoR), The Netherlands.

The set of programs is freely available for academic and research community. The different programs allow the user to perform several bibliometric analyses, such as: co-word analyses, co-authorship, author bibliographic coupling, journal bibliographic coupling, author co-citation, animation of network data, co-word mapping of texts (lines), visualization of various networks and organization of Google Scholar files into files for relational database management (MS Access, dBase), etc. The institutional and international collaboration, even the collaboration at the level of cities can be analysed with the help of this program. The results can be visualized using external software, such as Pajek, UCINET, Network Workbench Tool or the Sci2 Tool. Also, the visualization of these collaboration networks can be done using Google Maps and external software.

2.12 Publish or Perish (PoP)

Publish or Perish (PoP) is a software program that retrieves and analyses academic citations. It was

developed by Anne-WilHarzing, Professor of International Management, Middlesex University, London in the year 2006. Publish or Perish is designed to empower individual academics to present their case for research impact to its best advantage based on citations. It uses Google Scholar and Microsoft Academic Search to obtain the raw citations, then analyses these and presents the following metrics:

- Total number of papers and total number of citations,
- Average citations per paper, citations per author, papers per author, and citations per year,
- Hirsch's h-index, Zhang's e-index and related parameters,
- Egghe's g-index,
- The contemporary h-index,
- Three variations of individual h-indices,
- The average annual increase in the individual h-index,
- The age-weighted citation rate(AWCR) and AW-index,
- An analysis of the number of authors per paper and Multi-authored h-index.

The results from the analysis are available / displayed on-screen and can also be copied to the Windows clipboard (for pasting into other applications) or saved to a variety of output formats (for future reference or further analysis). Publish or Perish includes a detailed help file with search tips and additional information about the citation metrics.

Publish or Perish works on system based on Windows, OS X and GNU/Linux operating systems. Its latest version is 5.26.2 released on 8th February 2017.

2.13 SciMAT

SciMAT (Science Mapping Analysis Software Tool) is an open source science mapping software tool which incorporates methods, algorithms, and measures for all the steps in science mapping workflow, from preprocessing to the visualization of the results. It was developed by M.J. Cobo, A.G. López-Herrera, E. Herrera-Viedma, and F. Herrera, Soft of Computing and Intelligent Information Systems (Sci2s) Research Group, University of Granada, Spain. SciMAT has been supported by the Project of Spanish Ministry of Education and Science. SciMAT allows the user to carry out studies based on several kinds of bibliometric networks. Different normalization and similarity measures can be used over the data. Several clustering algorithms can be chosen to cut up the data.It is based on a longitudinal science mapping approach.

SciMAThas different modules that help the analyst to carry out the steps of the science mapping workflow, such as: a) knowledge base and document Management module; b) science mapping and analysis module; and c) visualization module.

The main characteristics of SciMAT are:

- Loaders: It helps for acquisition and handling of data in ISI Web of Knowledge format and RIS format.
- Bibliometric networks: SciMAT has incorporated methods to build several kinds of bibliometric networks based on co-word analysis, co-author, co-citation, bibliographic coupling, and authors' clusters, etc.
- Preprocessing: SciMAT implements a wide range of preprocessing tools such as detecting duplicate and misspelled items, time slicing, data reduction and network reduction.
- Normalization: SciMAT has different normality measures to perform normalization, i.e. Association Strength, Equivalence Index, Inclusion Index, Jaccard's Index and Salton's Cosine.

- Mapping (through clustering): For science mapping, SciMAT has incorporated Simple Centers Algorithm, Single-linkage, Complete-linkage, Average-linkage and Sum-linkage clustering algorithms.
- Analysis: SciMAT allows the analyst to perform: network analysis (Callon's density and centrality), performance and quality analysis (sum, minimum, maximum and average citations, and bibliometric measures based on citations, such as: h-index, g-index, hg-index or q2-index), and temporal analysis. Also, it helps to track the conceptual, intellectual or social evolution of a research field through the course of time periods.
- Visualization: To visualize the result, strategic diagram, cluster network, overlapping map, evolution map can be created in SciMAT.
- Report: In SciMAT, outputs / reports are generated in HTML and LaTeX format.

SciMAT has been developed using Java as programing language.As such, it run in the majority of the operating systems i.e. (Windows, Linux, MacOS, etc. To run SciMAT, version 8 of Java has to be installed in the system. It is free software available under GPLv3 license which can be downloaded, redistributed or modified under the terms of the GNU General Public License. The latest version of SciMATis v1.1.04 released on 12th July, 2016.

2.14 Network Workbench (NWB) Tool

The Network Workbench (NWB) project at Indiana University, USA developed a large-scale network analysis, modelling and visualization cyber infrastructure toolkit for biomedical, social science and physics research. The NWB can perform network analysis, modelling, and visualization with the most effective algorithms and a wide variety of reference datasets. The NWB tool supports network science research across scientific boundaries.

The NWB tool is an algorithm integration framework that supports easy addition and dissemination of existing and newly created algorithms. The tool uses the Cyber infrastructure Shell (CIShell) written in Java, an OSGI-based software architecture, to facilitate easy plug and play of diverse algorithms. The NWB tool has a menu driven interface that supports network/graph load, view and save operations, etc. The NWB tool includes GUESS, a powerful and flexible network visualization tool. The tool can load, process, and save various network file formats including NWB (*.nwb), GraphML (*.xml or. graphml), XGMML (*xml), Pajek (*.net), Pajek (*.mat), TreeML (*.xml), Scopus (*.scopus), NSF (*.nsf), Endnote (*.enw), Bibtex (*.bib), CSV (*.csv), ISI (*.isi) and two-column edge lists (*.edge). It also supports viewing and saving plain text files (*.txt) generated by algorithms.

The Network Workbench tool provides significant functionality for scientometricians, including the ability to analyze, clean, and create networks derived from scholarly data sources, such as ISI, Scopus, the NSF grant database, BibTeX and Endnote reference formats.

Some of important scientometrics analysis features of NWB tool are:

- Removes ISI duplicate records and rows with multitudinous fields;
- Detects duplicate nodes;
- Update network by merging nodes; and
- Extract directed network, paper citation network, author paper network, co-occurrence network of word and reference, co-author network, document co-citation network and co-citation similarity network.

The NWB tool is freely available to download at http://nwb.cns.iu.edu/download.html. The latest official release version of NWB tool is 1.0.0 released on 15th September, 2009. The NWB tool works on Windows, Linux and Mac systems.

2.15 Sci2 Tool

The Science of Science (Sci2) is a modular toolset specifically designed for the study of science. It supports the temporal, geospatial, topical, and network analysis and visualization of scholarly datasets at the micro (individual), meso (local), and macro (global) levels. The Sci2 tool was developed by Cyber Infrastructure for Network Science Center Team, Indiana University, USA.

Sci2 is OSGi/ Cyber Infrastructure Shell (CIShell) powered, which means it can easily be extended to support and integaret new algorithms, input formats, and more through the OSGi/CIShell plugin architecture. Sci2 tool hosts many tools to aid in every step of the data preparation, analysis, and visualization process. A number of data formats are supported on Sci2 platform, such as: NWB (*.nwb), GraphML (*.xml or. graphml), XGMML (*xml), Pajek (*.net), Pajek (*.mat), TreeML (*.xml), Scopus (*.scopus), NSF (*.nsf), Endnote (*.enw), Bibtex (*.bib), CSV (*.csv), ISI (*.isi), and edge lists (*.edge).

Some of the main functionalities of Sci2 tool are:

- Loading Data: Load a supported file format for preparation, analysis or visualization.
- Data Preparation: Extract networks from raw data or update currently existing networks by merging nodes and removing duplicates.
- Processing: Clean data for analysis and visualization.
- Analysis: Employ a variety of advanced analysis algorithms for temporal, topical, geospatial, and network data.
- Modelling: Graph generation with aging, scaling, random, and other specifications.
- Visualization: Visualize temporal, topical, geospatial, and network data.

Similar to the NWB tool, Sci2 tool can read data files from different databases such as Web of Science and Scopus and different export formats such as Bibtex and EndNote. It can also import plain text exports direct from Web of Knowledge. The data preparation function cleans the bibliographic data and creates different networks and tables that can be used in preprocessing, analysis, and visualization. Principally, the networks that can be extracted are as follows: co-author, co-PI (Principal Investigator), co-word, document co-citation, journal co-citation, author co-citation, author bibliographic coupling, document bibliographic coupling, and journal bibliographic coupling. Moreover, the tool can build different direct linkage networks such as author-citation, document citation, source-citation paper, and, finally, author-document (consumed/produced) network.

The Sci2 tool is available freely and can be downloaded upon registration at: https://sci2.cns.iu.edu/user/welcome.php.

2.16 SitKis

Sitkis is a free Java and MS Access based software tool developed exclusively for bibliometric analysis. It helps researchers during computation process of research analysis and evaluation of scientific information. It provides tools for extremely streamlined analysis of bibliometric networks. User can calculate large amount of data in few minutes utilizing Sitkis.

Sitkis incorporates the following functionality:

- Import ISI Web of Science data on articles and other publications into Microsoft Access Database for easy access and manipulation;
- Create analyses of citing and cited articles, including time series trends in citation classics within a specific discourse;
- Export UCINET-compatible networks of citing and cited articles. Export functionality includes

automatic normalization, selection of year ranges, threshold levels for minimum number of citations, etc;

- ❖ Group articles into independent dense groups, and analyze different theoretical streams within a selected scientific discourse; and
- ❖ Generate statistics based on the country or university of the original or citing authors.

Advanced users can also accomplish the following tasks much more efficiently by utilizing Sitkis:

- ❖ Manage knowledge of a topic area by categorizing and prioritizing articles,
- ❖ Create bibliometric analyses by coding articles according to criteria of their choice,
- ❖ Cluster and partition co-citation networks to reveal the structure of citation and co-citation patterns; and
- ❖ Use abstracts of articles in a text analysis software.

Sitkis requires Microsoft Access 2000 (or newer, part of Microsoft Office) and Java 1.3 (or newer) run time environment (freely available from Sun Microsystems) to function. Sitkis runs on all PC computers, but a relatively powerful computer is recommended for analysis dealing with large number (over 5000) of articles.User can download the new version of SitKis from: https://www.dropbox.com/s/ukl1624t02r31sg/sitkis2012.zip.

2.17 VantagePoint

VantagePoint is a powerful text-mining tool for discovering knowledge in search results from patent and literature databases. VantagePoint helps the user to rapidly understand and navigate through large search results, giving them a better perspective on their information. Vantage point is a commercial software tool developed by Search Technology, Inc., USA.

VantagePoint works with search results from text databases. It is most helpful when we need to work with thousands of records instead of a few dozens. VantagePoint is a menu-driven platform. Major features and functionalities of Vantage Point are as follows:

- ❖ Extracting and Indexing Data: After the user imports the data into VantagePoint, fields are mined from the text using pattern matching, rule-based, and natural language processing techniques to obtain: a) Fields found in most bibliographic databases (for example, authors, inventors, affiliations, assignees, dates, descriptors, index terms, and classification codes); b) Normalized values that are sometimes buried in the basic fielded data or presented in mixed formats, such as dates, classification codes, or patent numbers; c) Meaningful words and phrases from the titles, abstracts, patent claims, and other free text; and d) Entities defined in user-managed dictionaries. VantagePoint comes with access to their in-built library of import filters, thesauri and macros. It also comes with tools to build user's own import filters, thesauri, and macros for proprietary data sources and business processes. User can also import Excel or Access data using VantagePoint's "Import Database Table" wizard.
- ❖ Top 10 Lists: User can browse their data from many perspectives. The simplest tool is a list. Using a list of affiliations (or authors or countries), user can see the top affiliations (or authors or countries) and browse the records for each one. User can sort and search his/her lists in an instant, and create groups in their lists in many different ways. "List Comparison" lets the user compare any two lists from any set of VantagePoint data and identify the common or unique items in the lists. With time-sliced data sets, this can help the user to identify new or emerging concepts, authors, institutions or countries. "Using Group" using Thesaurus, user

can apply a thesaurus to own list and create groups of list items. "Find and Group" searches the list for user's target text and adds matching items to a group. "Find" provides for three search strings and several Boolean operators (for example, "and," "adjacent," "near4," "or", etc.).

- Co-occurrence Matrices: Using a Co-occurrence matrix, user can spread a list across any other list. For example, using a co-occurrence matrix of "author" and "year of publication," user can see an author's publication trend over time and browse their publications by year. This way, user can see which authors have been working in an area for the longest time as well as whether they are still active. Further, data from lists and co-occurrence matrices can be easily exported to other applications for visualization or customized analysis.

- Maps/Networks: Beyond one-dimensional (lists) and two-dimensional (co-occurrence matrices) analyses, VantagePoint performs multidimensional statistical analysis to identify clusters and relationships among concepts, people, organizations and countries.

- Data Cleaning: VantagePoint uses fuzzy matching techniques to identify, associate, and clean up data. For example, it handles misspellings, alternative hyphenation and capitalization, and differing conventions for listing the names of people and companies, providing the user with higher-quality data that is essential for good analysis.

- User Managed Thesauri: With VantagePoint user can create, edit, and apply thesauri, which can be used for specialized data reduction or conversion. Using a thesaurus, user can easily combine all variants of a data element (for example, United States, US, U.S., USA, etc.). For other types of analysis, user can combine data elements into broad categories (for example, "aluminum alloys," "magnesium alloys," "carbon fiber reinforced plastics," and "copper alloys" into "Materials"; or "USA," "Canada," and "Mexico" into "North America").

- Scripting: User can automate sequences of actions using VantagePoint's extensions to Microsoft's VBScript. User can create and distribute scripts and make his/her own customized analysis techniques and processes easily repeatable.

VantagePoint only works on Windows 7, 8, and 10 platforms. VantagePoint's installation on Windows Server is not supported and also on other operating systems, e.g., Macintosh OS X or Linux. VantagePoint is commercial, licensed on a per-seat basis. The standard commercial single seat VantagePoint license is perpetual and requires no annual fees after the initial purchase. However, user can get a 30-day trial free copy of VantagePoint.

2.18 Bibliometrix R Package

Bibliometrix provides a set of tools for quantitative research in scientometrics and bibliometrics. Bibliometrix works with data extracted from the two main bibliographic databases: Scopus and Clarivate Analytics's ISI Web of Knowledge. Bibliometrics turns the main tool of science, quantitative analysis, on itself. Essentially, bibliometrics is the application of quantitative analysis and statistics to publications such as journal articles and their accompanying citation counts. Bibliometrix package provides various routines for importing bibliographic data from these two databases, performing bibliometric analysis.

Bibliometrix supports scholars in three key phases of analysis:

- Data importing and conversion to R format;
- Bibliometric analysis of a publication dataset; and

- Building matrices for co-citation, coupling, collaboration, and co-word analysis. Matrices are the input data for performing network analysis, multiple correspondence analysis, and any other data reduction technique.

The stable version of Bibliometrix can be downloaded directly from RCRAN Package Repository available at https://cran.r-project.org/web/packages/bibliometrix/index.html. The latest version of Bibliometrix package is 1.4 which was released on 24-01-2017. The package is licensed and distributed under GPL-3 license.

2.19 metaknowledge

metaknowledge, a Python3 package is basically used for doing computational research in bibliometrics, scientometrics, and network analysis. It is also being used to simplify the process of doing systematic reviews in any disciplinary context. metaknowledge is developed by NetLab research group headed by Dr. John McLevey's at the University of Waterloo, Canada.

metaknowledge is a Python3 library that simplifies bibliometric research using data from various sources. It reads a directory of plain text files containing meta-data on publications and citations, and writes to a variety of data structures that are suitable longitudinal research, computational text analysis (e.g. topic models and burst analysis), Reference Publication Year Spectroscopy (RPYS), and network analysis (including co-citation, co-authorship, multi-modal, multi-level, and dynamic). metaknowledge can easily handles large datasets (e.g. several million records) efficiently.

metaknowledge currently handles data from the Web of Science, Scopus, PubMed, Proquest Dissertations & Theses, administrative data from the National Science Foundation, and the Canadian tri-council granting agencies: SSHRC, CIHR, and NSERC.

There are different modules available in metaknowledge, such as:

- contour: A nicer matplotlib graph visualizer and contour plot;
- WOS: The backend functions and classes associated with the Web of Science;
- medline: The backend functions & classes associated with Medline, the format used by Pubmed;
- proquest: The backend functions and classes associated with ProQuest;
- scopus: The backend functions and classes associated with records from scopus; and
- journalAbbreviations: Handles the abbreviated journal names used by WOS.

The metaknowledge comes with a command-line application named [metaknowledge]. This provides a simple interface to the python package which allows the generation of most of networks along with ways to manage the records themselves. Datasets created with metaknowledge can be analyzed using NetworkX and the standard libraries for data analysis in Python. It is also easy to write data to csv or graphml files for analysis and visualization in R, Stata, Visone, Gephi, or any other tools for data analysis. metaknowledge also has a simple command line tool for extracting quantitative datasets and network files from Web of Science files. This makes the library more accessible to researchers who do not know Python, and makes it easier to quickly explore new datasets.

metaknowledge is a free and open source software, distributed under the GPL license. Its latest version is metaknowledge 3.1.2 which can be downloaded from https://pypi.python.org/pypi/metaknowledge#downloads.

3. Conclusion

In this article, a brief profile of different science mapping and visualization software tools used in bibliometric and scientometric studies is provided. A total number of nineteen software tools have been covered in the article which are widely used by the academic and scientific research community worldwide. It is very difficult to choose the best among all as each of these software tools have their own set of features, characteristics and functions to perform specific task. Most of these tools are freely available to the users over the Internet to download and use. The students, the research scholars and the professionals who have interest to work in bibliometric and scientometric related studies would find these tools useful in their studies.

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Visitors

Prof. Anamik Shah, Vice-Chancellor, Gujarat Vidyapith, Ahmedabad, Gujarat

Dr. Nabi Hasan, University Librarian, Aligarh Muslim University, Aligarh, Uttar Pradesh

Dr. Kumud Sharma, Department of Hindi, University of Delhi, New Delhi

Dr. (Mrs.) Pankaj Mittal, Additional Secretary, UGC, New Delhi

Prof. Ram Bux, Department of Hindi, Jawaharlal Nehru University, New Delhi

Prof. Krishna Amin-Patel, Centre Head, National Institute of Design (NID), Gandhinagar, Gujarat

Dr. Ram Gopal Singh, Professor & Research Director, Department of Hindi, Gujarat Vidyapith, Ahmedabad, Gujarat

Staff News

Dr. Jagdish Arora, Director

Dr. Jagdish Arora delivered keynote address on "Media and Information Literacy at INFLIBNET Centre", during the inaugural session of the UNESCO-supported Capacity Building Workshop on Media and Information Literacy held at Punjabi University, Patiala on17th-19th October 2016. He delivered keynote address on "Changing Roles of Libraries and Librarians in Libraries of Future" during the E-Content 2016: A Seminar on Library Services and Management – A Platform Approach held on 22nd November, 2016 at Ahmedabad. He was an invited speaker on "Role of Social Media in Promoting Library Services" during the inaugural session of International Conference on "Marching Beyond the Libraries (ICMBL – 2016): The Role of Social Media and Networking held in KIIT University, Bhubaneswar, 25th to 26th November, 2016.

Dr. Arora was invited to moderate the session on "Digital Literacy: Standards and Policy "during 5th International Conference on Digital Libraries (ICDL-2016): "Smart Future: Knowledge Trends that will Change the World" held at India Habitat Center, New Delhi, on 13th-16th December, 2016. He chaired a special session on National Digital Library (NDL) and moderated a panel discussion on NDL during 5thInternational Conference on Digital Libraries (ICDL-2016): "Smart Future: Knowledge Trends that will Change the World" held at India Habitat Center, New Delhi on 13th December, 2016.

Mr. Manoj Kumar K., Scientist D (CS)

Mr. Manoj Kumar was invited to deliver a lecture on " Academic Integrity in Research: Use of Anti-plagiarism Tools" on 27th October 2016 at Mangalore University, Mangalore. He also demonstrated technical process involved in uploading theses into Shodhganga as well as use of the anti-plagiarism tools on 28th October 2016. He was also invited for inaugurating "E-Piravi in Education: Research, Resources and Plagiarism" during Kerala Piravi day by M E S College, Mampad, Malappuram, Kerala on 1st November 2016.

Mr. Abhishek Kumar, Scientist C (CS)

Mr. Abhishek Kumar attended meetings of subcommittee, e-PG Pathshala held on 4th October, 2016 at University of Grants Commission (UGC), New Delhi. He was invited to attend the meeting on e-content development in Mathematics at University of Calcutta, Kolkata on 14th October 2016. He was also invited for demonstrating e-content for MOOC at UGC, New Delhi on 24th October, 2016. He attended a meeting of Task Force Committee for e-Content, UGC, New Delhi on 25th October, 2016. He attended meeting of National Institute of Ranking Framework (NIRF)-Formula Discussion held on 2nd November and 3rd December, 2016 at National Board of Accreditation, New Delhi. He made a presentation of his paper entitled India rankings 2016: Ranking Model for Indian Higher Educational Institutions on 18th November, 2016 during International Conference on ICT in Business, Industry and Government (ICTBIG) 2016. He was invited to deliver a talk on MOOC at Jamia Millia Islamia University, New Delhi on 19th November, 2016. He also attended meeting of subcommittee, e-PG Pathshala held on 23th December, 2016 at UGC, New Delhi.

Mr. Swapnil Patel, Scientist B (CS)

Mr. Swapnil Patel was invited to give suggestions on the Library module of the In-house ERP software on 21st November 2016 at INDUS University, Ahmedabad.

Ms. Kruti J. Trivedi, Scientist B (LS)

Ms. Kruti Trivedi attended first Meeting of Implementation Core Committee (ICC) for NIRF held on 15th November, 2016 at National Board of Accreditation, New Delhi.

Mr. Hiteshkumar Solanki, Scientist B (CS)

Mr. Hiteshkumar Solanki attended Meeting of National Institute of Ranking Framework (NIRF)-DCS requirement held on 13th October, 2016, 2nd November, 2016 and 3rd December, 2016 at National Board of Accreditation, New Delhi.

Mr. Pallab Pradhan, Scientist B (LS)

Mr. Pallab Pradhan attended the International Conference on "Marching Beyond the Libraries: The Role of Social Media and Networking" held at KIIT University, Bhubaneswar during 25th to 26th November, 2016. He made a presentation of his research work entitled "Analysis of Mendeley Readership Statistics of Indian Information and Library Science Literature".

Mr. Raja V, Scientist B (CS)

Mr. Raja V attended Meeting of National Institute of Ranking Framework (NIRF)-DCS requirement held on 13th October, 2016 at National Board of Accreditation, New Delhi.

Mr. Dharmesh Shah, STA (CS)

Mr. Dharmesh Shah attended Meeting of National Institute of Ranking Framework (NIRF) DCS requirement held on 13th October, 2016, 2nd November, 2016 and 3rd December 2016 at National Board of Accreditation, New Delhi.

Staff Achievement

Mr. Miteshkumar Pandya, Scientist B (LS)

The Centre congratulates to Mr. Miteshkumar Pandya, Scientist B (LS) for awarding Ph.D degree in Library and Information Science for his thesis entitled "Thesaurus Development for Indian Social Science Literature on Relational Database Management System and its Integration with OII" by Sardar Patel University, Vallabh Vidyanagar.

Users' Speak

On Shodhganga

दुनिया भर में मशहूर शोधगंगा में अपनी थिसिस देखना मेरे लिए एक सौभाग्य है। आपने जिस तत्परता से यह कार्य कुछ ही घंटों में कर दिया और इसके लिए ई–मेल के जरिये मेरा कई बार मार्गदर्शन किया, उसके लिए मैं दिल की गहराई से आपका आभारी हूँ। यही तत्परता, शालीनता और लगन ही शोधगंगा की उत्तरोत्तर बढ़ती लोकप्रियता, प्रभाव और सार्थकता के मूल में है। एक अनुरोध करना चाहता हूँ। इसके की – वर्ड में फाउंडेशन और ब्रॉडकास्ट को हटाकर उनकी जगह Paid news और managed news करा सकें, तो और अच्छा हो जाएगा। – **प्रो. सुभाष गुप्ता, देहरादून**

11th International

CALIBER 2017

August 2-4, 2017

Venue
Anna University, Chennai
Tamil Nadu

Convention Theme

Re-Envisioning Role of Libraries: Transforming Scholarly Communication

Sub-Theme

Open Education
Research Data and Knowledge Management
Role of LICs in the Assessment of Scientific Research
Re-Envisioning the Role of Libraries and Information Centres

in collaboration with :-

Organised by :-

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Gandhinagar, Gujarat

Anna University
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ODISHA BHASKAR

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Int'l meet on libraries concludes at KIIT

PNS ■ BHUBANESWAR

The International Conference on Libraries concluded at the KIIT University on Wednesday.

The theme of the conference was 'Marching beyond the Libraries: The Role of Social Media and Networking'. Over 250 delegates from India and abroad participated the conference where 74 published papers and 68 papers were presented.

Dr Jagdish Arora, Director, INFLIBNET; Prof B Ramesh Babu, Madras University; Dr Opera Gineva Chinemdu, Nigeria; Dr MG Sreekumar, Librarian, IIM Kozhikode; Dr RC Gaur, Chief Librarian, JNU Delhi; Dr MN Jadav, Librarian, IIT Madras; Prof Pravakar Rath, Dean, Mizoram University; Dr K Elavazagan, Librarian, IIM Trichy; Prof KC Das, Professor, Utkal University; Prof Bulu Moharana, Professor, Sambalpur University; Dr. Sunil Kumar Satpathy, Librarian, NIT, Raipur; Dr Masoom Raza, Aligarh Muslim University; Dr Parul Zavert, SNDT Womens University, Mumbai; Prof RK Mahapatra, Tripura University; Dr Sada Bthart Sahu, SIDBI, Lucknow; Dr DK Nehru, BARC, Mumbai; and Dr Radhakrishnan Natrajan, Periyar University, Tamil Nadu participated in different tech- nical sessions.

Chief guest D Samanta, Regis University, spoke a gural ceremony. She said library has an important role in dissemination of knowledge. In the age of information tech- nology social media play a vital

Prof AK Rath, Chairman, CLC, welcomed the guests while Dr Bijayalaxmi Rautaray proposed a vote of thanks.

INFLIBNET in Regional News

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