9th International Conference on Webometrics, Informetrics and Scientometrics and 14th COLLNET Meeting

August 15-17, 2013

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Regional Development Fund
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COLLNET

15th of August

11.00-12.00 Registration

12.00-13.30 Opening Ceremony

Official Opening: **Ülle Must** (Local Chair)
Opening Remarks: **Andres Koppel** (Head of Estonian Reserch Council)
Opening Remarks**: Hildrun Kretschmer** (General Chair and COLLNET Co-ordinator)

13.30-14.30 Light Lunch

14.30-16.00 Plenary Session

Chair: Hildrun Kretschmer

Wolfgang Glänzel (Belgium, Hungary): Characteristics of co-authorship patterns of individual scientists

Ronald Rousseau (Belgium), **Brendan Rouseau** (Belgium): The outgrow index and related indicators - including a dedicated software program

16.00-16.30 Coffee/Tea

16.30-18.00 Plenary Session

Chair: I.K. Ravichandra Rao

Hildrun Kretschmer (Germany, China), **Theo Kretschmer** (Germany), **Johannes Stegmann** (Germany): Growth and Special Change of Collaboration Patterns Obtained from the Journal of Experimental Medicine and from PNAS

V.A.Markusova (Russia), **Libkind A.N.** (Russia), **Mindeli L.E**. (Russia), **Jansz M**. (The Netherlands): Bibliometric performance in two main research domains: the Russian Academy of Sciences and the Higher Education sector

19.00-21.00 Reception in Ahhaa Science Centre

Welcome
Cultural programme
Excursion in Ahhaa Science Centre
Dinner Reception

16th of August

9.00-10.30 Plenary Session

Chair: Ronald Rousseau

I.K. Ravichandra Rao (India): Weak Relations among the Impact Factors, Number of Citations, References and Authors

Jean-Charles Lamirel (France): "The exploitation of feature maximization metric in scientometrics: a global survey"

10.30-11.00 Coffee/Tea

11.00-12.30 Parallel Sessions

COMMUNICATION and COLLABORATION Part I

Chair: Valentina Markusova

Ülle Must (Estonia): The impact of multi-authored papers: the case of small country

Hsuan-I Liu (Taiwan): The collaboration trends and the changes in authorship patterns in Information Technology

Sujit Bhattacharya, Shilpa, Fayaz and Praveen Sharma (India): Role of Mediating Organization in Influencing Collaboration: Case Study of CEFIPRA and Indo-French Bilateral Institution

Mohammad Hassanzadeh, Babak Akhgar, Fatemeh Navidi (Iran): Integrating Science and Knowledge indicators towards a rational framework of investigations: a Comparative Approach

NATIONAL ORIENTED STUDIES Part I

Chair: S.L. Sangam

Debal C Kar (India): Paradigm Shift in Scholarly Communication with Reference to S&T Development in India

P.K. Jain, Parveen Babbar (India): Emerging Giant Markets for Statistical Serials in Social Sciences in India: A case study of ICCSR Institutions in India

Jiang Chunlin, Wenyuan Wang, Junwei Sun (China): Bibliometrics Analysis: Scientific Collaboration between Mainland China and Taiwan (1978-2010)

K P S Sengar, N K Wadhwa and R.K. Verma (India): S & T Contribution of the Seven Sister States of India in 1991-2011 by using Web of Science (WoS) : A Comparative study

MISCELLANEOUS

Chair: Madis Saluveer

Yuan Sun and Masaki Nishizawa (Japan): Institutional networks analysis based on research project activities

Sônia Regina Zanotto, Samile Andréa de Souza Vanz and Ida Regina Chittó Stumpf (Brazil): Diffusion of Brazilian statistic information

Jean-Pierre V.M. Hérubel (USA): Interdisciplinary Characteristics of Historical Monographs and Intellectual Interactions at Work in Historical Scholarship: An Exploratory Discussion

Li Gu, Kun Ding, Weichun Yan (China): Management or Productivity: A Scientometrics Analysis on the Role of President of University

12.30-13.30 Lunch

13.30-15.00 Parallel Sessions

COMMUNICATION and COLLABORATION Part II

Chair: Mohammad Hassanzadeh

K.P.S. Sengar, N.K.Wadhwa, and R.K.Verma (India): Bibliometric study of India's research output in Leishmaniasis chronic disease and International collaboration during 1991-2011

Carey Ming-Li Chen (Taiwan): Using Funding Acknowledgements to Observe the Pattern of International Collaboration: The Pilot Study on Publications Partially Funded by Taiwanese Funding Agency

Masaki Nishizawa and Yuan Sun (Japan): How well do newspapers describe scientific research? ---An Investigation into the Correlation of Press Releases and Newspaper Articles

Aref Riahi, Mohammad Amin Ghaneei Rad, Elham Ahmadi (Iran): Iran's scientific Interactions and Communications with the G8 Countries (Skype presentation)

Elham Ahmadi, Farideh Osareh, Gholamreza Heidari, Aref Riahi (Iran): The Obstacles and Solutions for Group Work and Scientific Cooperation in Iran (Skype presentation)

NATIONAL ORIENTED STUDIES Part II

Chair: P.K. Jain

Burcu Umut Zan and Nuray Zan (Turkey): The University and Industry Relation in Turkey: The Case of Chemistry Field

S.L. Sangam, Shivaranjini. S. Mogali (India): Mapping of Indian Social Scientific Literature

Shilpa and Sujit Bhattacharya (India): Bibliometric Study of Scientific Publications from India

Salek Chand (India): Library Automation: An Indian Perspective

THEORETICAL APPROACHES and METHODOLOGY

Chair: Wolfgang Glänzel

Bernd Markscheffel (Germany): New Metrics, a Chance for Change towards Scientometrics A Preliminary Discussion of Recent Approaches

Pascal CUXAC and Jean-Charles LAMIREL (France): Analysis of evolutions and interactions between science fields: cooperation between feature selection and graph representation

Feicheng Ma, Penghui Lyu, Yulin Wang (China): The evolution pathway, hotspots and frontiers study on interdisciplinary

Martin Meyer, Wolfgang Glänzel, Bart Thijs (UK, Finland, Belgium): Mapping of the Business Information Systems Literature

15.00-15.30 Coffee/Tea

15.30-18.00 Parallel Sessions

WORLD WIDE WEB, WEBOMETRICS and NETWORKING

Chair: Bernd Markscheffel

Kim Holmberg (UK, Finland): Discovering scholarly communication on Twitter through keyword searches

Burcu Umut Zan, Bulent Karasözen and **Özlem Bayram (Turkey):** Collaboration Studies in Turkey: A comparison of Web of Knowledge With Scopus

Gourav Raj Walia and Salek Chand (India): Library Collaboration Through Networking In India: An Overview

CITATIONS, EVALUATION

Chair: Martin Meyer

Grant Lewison (UK): Month-by-month analysis of biomedical publications and citations and the effect of different citation time windows

Wen-Yau Cathy Lin (Taiwan): Where does author self-citation occur? A citation context analysis

Ivana Roche (France), Nathalie Vedovotto (France), Dominique Besagni (France), Claire François (France), Marianne Hörlesberger(Austria), Edgar Schiebel (Austria): How to address the role of a journal as a knowledge transfer vector between disciplines? A case study relying on citations analysis

TECHNOLOGY ORIENTED STUDIES

Chair: Jean-Charles Lamirel

WANG Hai-long and XIAO Jian-jie (China): Effects of Knowledge Network Modularity on the Utility of Inventions in Semiconductor Industry

Mohsin U Khan (India): India's Science Technology and Innovation Policy in the context of Internationalization of R&D.

Szu-chia S. Lo (Taiwan): Re-exam contribution of academic research to development of industrial technologies

Chao-ling Tsai and Szu-chia S. Lo (Taiwan): Patent Analysis of Hydrogen Storage Technology

18.30-20.00 Walking Tour

20.00 Dinner in restaurant Gunpowder Cellar

17th of August

9.00-10.30 Poster Session

Chair: Grant Lewison

Jiadi Yao (UK), Les Carr1 and Stevan Harnad (Canada): Understanding institutional Collaboration networks: Computer Science vs. Psychology

Jinseo Park, Jungjin Hong and JaeSung Kim (Korea): Diffusion of Expectation in Science and Technology – Citation Patterns of the Global Stem Cells Market Size in Korean Newspapers

Johannes Stegmann (Germany), Hildrun Kretschmer (Germany, China): Ranganathan today: a citation study

SUN Meng-xin and LUAN Chun-juan (China): Measurement of Converging Sciences and its Policy Implications -- A Case Study on Global Climatic Studies

Young-Duk Koo and Dae-hyun Jeong (Korea): Clustering Analysis in Green IT Using Patent Information

Young-il Kwon and Dae-hyun Jeong (Korea): Technology Relevance Analysis Between Wind Power Energy-Fuel Cell-Green Car Using Network Analysis

Aleksey Aldoshin (Belarus): Automation of Exhibition Activity Management as a Tool for the Intensification of International Science and Technical Cooperation

Natalia Dudko (Belarus): Internet Resources for Information Support of Research and Innovation Activity and Technology Transfer in the Republic of Belarus

10.30-11.00 Coffee/Tea

11.00-12.30 Plenary Session

Chair: Ülle Must
Sangam (India): Felicitation

Feedback from parallel sessions

Bernd Markscheffel (Germany): Introduction of COLLNET 2014: 10th International Conference on Webometrics, Informetrics and Scientometrics (WIS) & 15th COLLNET Meeting, September 2014, Germany

P.K. Jain (India): 11th International Conference on Webometrics, Informetrics and Scientometrics (WIS) & 16th COLLNET Meeting, September 2015, India

12.30 -14.00 Lunch

14.00-22.00 Tour. Bus leaves from the side of the hotel Dorpat at 14.00.

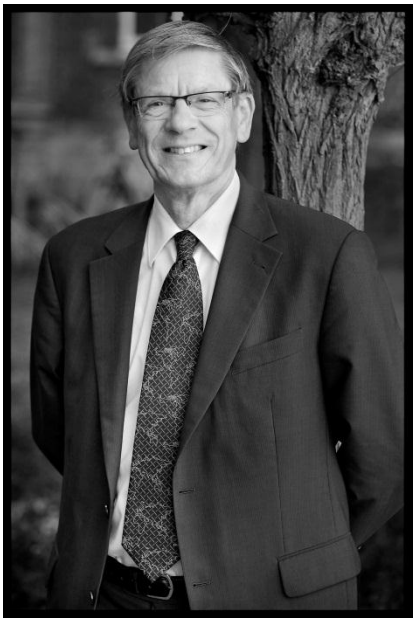
KEYNOTE SPEAKERS

Wolfgang Glänzel

Wolfgang Glänzel is Director of the Centre for R&D Monitoring (ECOOM) and Full Professor at KU Leuven. He studied mathematics in Budapest (Hungary) and holds a doctorate in this field (Eötvös Loránd University Budapest, 1984) as well as a PhD in Science Studies (Leiden University, 1997). His research interests are: quantitative analysis and mathematical models of the information processes in scientific research (Bibliometrics) and the theory of probability distributions (Mathematics).

Wolfgang Glänzel is Associate Editor-in-Chief of the journal Scientometrics and Secretary-Treasurer of the International Society for Scientometrics and Informetrics (ISSI). In 1999 he received the international Derek deSolla Price Award for outstanding contributions to the

Ronald Rousseau



Ronald Rousseau is a Belgian, living in Flanders, the Northern, Dutch-speaking part of the country. Ronald Rousseau is President of the ISSI (International Society for Scientometrics and Informetrics) and recipient of the Derek de Solla Price award for scientometrics.

He is Guest professor at the library and information science school of Antwerp University and research collaborator at Leuven University and Honorary Professor at Henan Normal University (China).

Hildrun Kretchmer

Head of the COLLNET- Center and COLLNET Co-ordinator

Honorary Professor, Henan Normal University, Xinxiang, China
Honorary Director and Special Fellow of WISELAB of the Dalian University of Technology, China
Editor, COLLNET Journal of Scientometrics and Information Management

Her work deals with collaboration processes in science from the viewpoints of bibliometrics and socio-psychology, modelling of collaboration systems and theory, development and change of dynamic social structures in science.

Theo Kretchmer

Science Manager of the COLLNET- Center and COLLNET Conferences Manager

1963-1966 Teacher in history, College of Legebruch, Germany
1966-1998 Teacher in philosophy and social science, College of Management, Steel Factory, Hennigsdorf, Germany
Since 1999 Science Manager of the COLLNET-Center
Since 2000 COLLNET Conferences Manager
His work in co-operation with Hildrun Kretschmer deals with collaboration processes in science from the viewpoints of bibliometrics, philosophy and social science, modelling of collaboration systems and theory, development and change of dynamic social structures in science.

I K Ravichandra Rao

Ravichandra Rao is at present Chief Editor of COLLNET Journal of Scientometrics and Information Management.

Also, Ravichandra Rao is now the Editor of the SRELS Journal of Information Management. Involved in my research and academic activities in scientometrics; formerly associated with Indian Statistical Institute in Bangalore for mote than forty years; published more than 65 research papers and two books. An Expert Member of Special Assistance Programme (in Scientometrics) Committee of the UGC for the Karnataka University (Dharwad, India).

Valentina Markusova

Valentina Markusova is Director of Information Service Department for the Russian Academy of Sciences (RAS) of the All Russian Institute of Scientific and Technical Information (VINITI) of the RAS, Moscow.

Her research intetests involve Citation Analyses; Science Indicators; Science Policy
Impact of transition economy on R&D;
Evaluation of Research Groups and Individuals; Gender issue and Women in Science.
She has received multiple research grants and authored more than 130 papers and six books chapters.

Jean-Charles Lamirel

Dr Habil. Jean-Charles LAMIREL is teaching Information Science and Computer Science at Strasbourg University of achieving his research in the INRIA-TALARIS project of French LORIA laboratory. His main domain of research is Machine Learning. He has interests both in theoretical models for Machine Learning and Machine Learning applications, like Text Mining and Scientometrics applications. He is the creator of the concept of Data Analysis based on Multiple Viewpoints paradigm (MVDA) and of the one of feature maximization and related metrics. Models based on these concepts have proven to outperform state-of-the-art models in the context of many challenging applications. Dr Habil.

Jean-Charles LAMIREL has authored more than 120 research papers in international conference and journals. He is one the board editor Member of editorial board of international journal "Collnet Journal of Scientometrics and Information Management", Taru publication, New Delhi, India.

Bernd Markscheffel

Bernd Markscheffel is Ass. Professor at the Chair of Information and Knowledge Management at Ilmenau University of Technology.

He received a Diploma Degree in Physics, graduated in Information Science and received a doctorate degree in Applied Information Systems from TU Ilmenau. His research and teaching interest include Semantic Web and TopicMap based semantic modelling, Digital Libraries and Search Engines and Scientometrics and New Metrics for research evaluation.

ABSTRACTS

15th of August

Characteristics of co-authorship patterns of individual scientists

Wolfgang Glänzel

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Publication activity, citation impact and communication patterns, in general, are changing in the course of a scientists career. Due to mobility or shifts in the scientists' research profile, also collaboration with their colleagues might be subject to considerable changes. Although bibliometrics at the level of individuals should be applied with the utmost caution, characteristic patterns in a scientist's career can be well depicted with bibliometric methods. A bundle of indicators and network tools are chosen to follow up the career and to visualise and quantify collaboration and performance profiles of researchers. These methods are, however, designed to supplement expert-opinion based and other qualitative assessment, and should not be used as stand-alone evaluation tools.

Growth and Structure Formation of Collaboration Patterns Obtained from the Journals *PNAS, SCIENCE* and the *Journal of Experimental Medicine*

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The paper is focused on social network analysis (SNA) and special structure formation processes of collaboration patterns in scientific networks. Three-dimensional visualization is used to show the growth and structural changes over time in the journals *PNAS, Journal of Experimental Medicine* and *SCIENCE.* Self-organization occurs in a variety of complex systems in nature and social networks. We will demonstrate how this process of self-organization can be found in co-authorship networks.

Bibliometric performance in two main research domains: the Russian Academy of Sciences and the Higher Education sector

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Bibliometrics has become a very important tool in government science policy in nowadays Russia. The paper describes the bibliometric performance by two research communities: the Russian Academy of Science (RAS) and Higher education institutions (HEI). Sources were the Science Citation Index-Expanded for 2006-2010 and the Journal Citation Reports, 2010. More than 132,400 records and their citation scores were analyzed by broad subject categories, organizations, source of publications and share of internationally collaborative papers. Despite huge financial inflow in the HEI in the last seven year the RAS performance is still much stronger. The RAS is responsible for 56.8% of the research output, the HEI for 42.5%. Research portfolio is focused on “hard sciences”. A significant involvement of RAS in collaboration with HEI was observed. Its share in research output published by HEI was 28.3% and varied greatly from weak - in Kazan Technical University (8.5%) - to strong - up to 87.5 % in Novosibirsk State University. A special study was conducted of articles cited at least 50 times (682 unique records). Among 214 organizations which produced highly cited articles, the share of the RAS was 46.2%. International collaboration had significant impact on Russian citation scores. Among 682 highly cited articles 93.8% were internationally collaborative papers. We believe that further studies are still necessary and we plan to look at articles cited at least 30 times, selecting only articles published without international collaboration. We are interested to see whether this yields a different picture with regard to the distribution of articles by subject category and organization.

Key words: Russia, university, research output, citation score , organizations, subject category, international collaboration, highly cited articles , Web of Science, InCites

16th of August

Weak Relations among the Impact Factors, Number of Citations, References and Authors

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Relations among impact factors, references, citations and authors are studied based on the data collected in the field of field mechanics. The multiple regression analysis indicates that in the regression equation $T_c = a =+ b*x_1 + c*x_2 + c*x_3$, there is a statistically significant relation among the four variables; T_c is the total number of citations received by an article; x_1 is the impact factor of the journal in which the article has been published; x_2 is the number of references in the article and x_3 is the number of authors in that article. The distribution of citations follows closely a lognormal distribution and the distribution of authors follows a Poisson distribution.. It has also been observed that the strength of the relations between references and citations, and impact factors and . citations are very weak.

COMMUNICATION and COLLABORATION Part I

The impact of multi-authored papers: the case of small country

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The new trend in 21th century is a steep increase in the number of papers whose author counts exceed thousand and more In current paper we survey how the hyper-authorship collaboration (more specifically CMS collaboration) affects small countries cooperation spectrum. We found that CMS collaboration strongly influences the co-authorship geography of the small countries. It does not only affect a very small and less productive countries but also productive countries. This means that anticipating the trends of countries' cooperation on the bases of the co-authorship has become more complex. Therefore the counties which want to develop their RD&I strategies with different regions should be very careful in using co-authorship data without critical analysis.

The collaboration trends and the changes in authorship patterns in Information Science

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This paper employs bibliometric methods to observe the collaborative trends and the phenomena of authorship ordering in Information Science, the research objects were set to be the published papers in the famous journal “MIS Quarterly”. The results show the increasing collaborative patterns both in individual, institution and country level. On the whole, domestic co-authorship papers were more than international ones. In terms of the authorship ordering of the Top 10 prolific authors, only one author who is the first author of 75% has the highest citation rate than others. Quantity of the paper is not positively to the citation rate, it depends on the data type. As to the authors with Top 10 citation rates, all authors are the first and reprint authors of all papers. It is obvious that high quality papers are collaborating with authors. Non-collaboration papers are gradually reducing. In future, we hope that our study can cover more journalists in the same field, and focus on specific authors with high paper output and quality, also combined with their background to study author ranking.

Role of Mediating Organization in Influencing Collaboration: Case Study of CEFIPRA and Indo-French Bilateral Institution

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International collaboration has become an important aspect of science. As Wagner (2008) shows that new invisible colleges of science are developing and new global networks which form an open system of learning are also emerging. Studies have shown that many motives can be attributed to this type of research collaboration such as complementary skills, tacit knowledge, and access to sophisticated instrument (see for example Bordons M. *et al*., 2012). There have been a large number of studies exploring collaboration process in science examined through research paper analysis identifying the positive role of collaboration on productivity, impact, etc. However, to our knowledge there has been no extensive study which has examined the role of bridging institution in fermenting international research collaboration. The present paper contributes in this direction.

Integrating Knowledge and Science indicators (Kientometrics) towards a rational framework of investigations: a Comparative Approach

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This paper is to depict on a framework for maximum approximation of science and knowledge indicators with development indicators. To this end, we strived to articulate interaction between science and knowledge indicators and their interoperability with development indicators to achieve in synergizing spade within which knowledge and science is leverage to solve social and environmental issues and any evaluation of science and knowledge is related to developmental goals. We introduced term "Kientometrics" to conceptualize our objectives of this interoperation. Findings of this research will contribute scientometrics community with a conceptual framework which has been examined in real world. Such an approach to scientometrics studies not only will improve the effectiveness of this kind of investigations, but also will attract attentions from executive and decision making community to them as well.

Key words: Kientometrics, Science indicators, Knowledge indicators, Interoperation, Conceptual framework

NATIONAL ORIENTED STUDIES Part I

Paradigm Shift in Scholarly Communication with Reference to Research & Development in India

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India is Progressing Fast. This is because:

a. India has long enjoyed a reputation as a destination for IT and business process outsourcing.
b. Now, the country is fast emerging as a major center for cutting-edge research and development (R&D) projects for global multinationals such as Microsoft, Google and Motorola as well as Indian firms.
c. More and more companies in industries ranging from IT and telecommunications through pharmaceuticals and biotechnoloy are setting up ambitious S&T R&D projects, in part to serve the Indian market, but also with an eye to delivering new generations of products faster to the global market.

India is an intelligent hub for R&D with over 493 Universities and 31,324 Colleges and Institutes. The number of universities as on 31 March 2012 is 620. As many as 5373 new colleges have been established during 2009-2010, thus taking the total number of colleges to 31,324 in 2009-2010 as against 25,951 colleges in 2008-2009, registering an increase of 21%. At the time of independence, there were only 20 universities and 500 colleges in the country with 210,000 students in the higher education system. But, after independence, there has been a phenomenal growth in all these numbers. Presently 250,000 Engineering Graduates completing itself per year (Compared to 60,000 in US). During the academic year 2009-10, there had been 146,25,000 students enrolled in various courses at all levels in universities/colleges and other institutions of higher education as compared to 136,42,000 in the previous year, registering an increase of 7.2 per cent. Out of 146,25,000 lakhs, 60,80,000 had been women students, constituting 41.6 percent.

Emerging Giant Markets for Statistical Serials in Social Sciences in India: A case study of ICCSR Institutions in India

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Statistics has an important role in determining the existing position of the country on socio-economic indicators such as per capita income, unemployment, population growth rate, housing, schooling, medical facilities etc. Statistical information is disseminated through Statistical Serials in India. The statistical serials play a very important role in the development of social sciences. India had a long history of collection and use of various kinds of statistics. Kautilya's Arthasastra, one of the greatest treatises of economics, indicated a system of census and data collection relating to agriculture, population and other economic activities, covering villages and towns. The development of serials can also be seen before independence through Census of India which was first conducted in 1872 and the report was published in form of Serial. The present millenniumlenium is witnessing a rapid development in statistical serials in India including the tremendous growth of state statistical serial publications. The Central government acts as the coordinating agency for presentation of statistics on an all-India basis. Before independence, India did not have a strong statistical system in the country but now has one of the best statistical systems in the world. Indian statistical serials are vast and extremely useful for the social science researchers particularly in accessing relevant statistical data on governmental organisations and private agencies. The paperdescibes the role od statistical serials in the development of Social Sciences. It describes the development of Statistical Serial in India and Statistical Organisations of India. The study also elaborates role of LIS professionals in the development of Statistical serials. It also provides the case study survey of ICSSR institutions in finding the user's views on use and evaluation of Statistical Serials in India.

Keywords: Statistical Serials; Statistics; Library and Information Science; India

Bibliometrics Analysis: Scientific Collaboration between Mainland China and Taiwan (1978-2010)

Chunlin Jiang, Wenyuan Wang , Junwei Sun

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Using statistic and bibliometric methods to characterize scientific cooperation between Mainland China and Taiwan through their bilateral co-authored papers covered by the Science Citation Index-Expanded, 1978-2010. In our paper, we exploit the feature of their cooperation in four levels: time sequence, discipline distribution, institution distribution and key fields. From the time sequence we know that the collaboration between Mainland and Taiwan is increasingly growing, especially after 1992. As for the subject distribution, Mainland and Taiwan tend to cooperate with each other on both strong disciplines such as physics, mathematics, chemistry and materials science. Meanwhile, the top 20 collaboration institutions are almost universities and research institutions with strong scientific research power. And the main form of the collaboration is university- university. Eventually, recommendations are put forward to make better scientific collaboration between both sides of the Taiwan Straits.

Keywords Mainland China, Taiwan, co-authored papers, recommendations

S& T Contributions of the Seven Sister States of India during 1991-2011 using Web of Science (WoS) Database – A preliminary Study

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Former Chief Scientist, CSIR-NISCAIR

Presents a bibliometric study of the publication patterns of academic and research scientists of seven sister States of India. Web of Science (WoS) database was used for retrieving the scientific publication' output of the seven sister states of India during 1991-2011. The data of these States were gathered for scientific publications, population, area, year of establishment, density and other factors. It was found that a total publication share of these States of India during the study period was 1.73% (with 10004 publications). Result shows that scientific productivity in terms of publications of Assam is higher than other seven six sister States of India. The study also reveals h-index of the most productive authors according to the Web of Science database. Seven of the most productive authors of each State are listed and their corresponding h-index values are provided. The number of publications and corresponding h-index associated to each author are also shown. Concludes that despite the continuous increasing trend of publications as shown in the study, there is an urgent need to substantially increase the research activities in the seven sister States of India which in turn would also improve upon the h-index of the authors and the institutions.

Keywords: Bibliometric study, Research output, North east India, h-index

MISCELLANEOUS

Institutional networks analysis based on research project activities

[1] **Yuan Sun and Masaki Nishizawa** [2]
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University research evaluation has conventionally been done by bibliometric indicators based on the number of papers published in top-ranked journals or the number of citations they have received. These indicators are outcomes of research activities and have some time lag with on-going activities in a sense. Is there any way to look at the actual process behind the research activities? We put forth that research projects can reflect current research activities to some extent. In this study, we look at research networks among universities based on projects accepted by the Grants-in-Aid for Scientific Research, which is the largest competitive external research funding source in Japan.

Diffusion of Brazilian statistic information

Sonia Regina Zanotto[1], Samile Andrea de Souza Vanz[2], Ida Regina Chitto Stumpf[3]

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This paper brings analysis on citations received by IBGE – Brazilian Institute of Geography and Statistics – publications from the perspective of the diffusion factor calculation theory and methodology. Considering that citations represent a way to measure how scientific ideas spread, we have sought ground in the diffusion factor theory proposed by Rousseau, Liu & Ye (2012) to present a practical application. The greater the number of authors, institutions and different countries, the higher is the degree of diffusion and this ratio is clear when analyzing the absolute citations to IBGE. By applying the diffusion factor, we were able to prove what the absolute numbers seemed to suggest: Gini index between 0.88 in 2009 and 0.90 in 2003 indicate a high dispersion factor, thus, there is a great number of authors, institutions and different countries that cite IBGE publications.

Interdisciplinary Characteristics of Historical Monographs and Intellectual Interactions at Work in Historical Scholarship: An Exploratory Discussion

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For the past four decades, academic historians have been pursuing interdisciplinary perspectives in their research; influenced by disciplines other their own, historians are influenced by innovations originating with humanities and especially social science disciplines. Methodological tools and theoretical perspective increasingly inform academic historical research. This exploratory examination of book reviews of historical monographs offers insight into this phenomenon; moreover, this preliminary study not only situates this phenomenon, it demonstrates another approach to measuring historical scholarship for historiographers attempting to understand their burgeoning discipline. Through examination of book reviews, not only trends are observed, but, useful insight into how interdisciplinarity may be influencing historical research adds to the historian's knowledge of his/her discipline as it undergoes critical intellectual influences emerging from other disciplines.

Keywords: disciplines, historical research, interdisciplinary, monographs

Management or Productivity: A Scientometric Analysis on the Role of Presidents of 6 Universities

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In this study science and technology management performance of the president of university is measured through the school's research output. From the history publications and citations of sciences, we can compare the publications from 6 universities and from 18 Presidents themselves both the term of service and relieving. The number and citation of publications has the steadily increase in U.S. and working as a University President hardly influences the publications of science and technology in U.S. When it comes to China, the number of publication increased fabulously, but the influence such as total citations and H-index is developed limited and slowly. And the scientific influences of Presidents themselves before 21st century still existed even though they have relieved for a long time.

Keywords: Scientometric Analysis, Role of President, President of University, Productivity

COMMUNICATION and COLLABORATION Part II

Bibliometric Study of India's Research Output in Leishmaniasis Chronic Disease and International Collaboration during 1991-2011

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This study analyses the research output in India in leishmaniasis chronic disease during the period 1991-2011 which includes research growth in leishmaniasis, global publication share, citation impact, share of international collaborative papers, major collaborative partner countries and patterns of research communication in most productive journals. It also analyses most productive Indian institutions, Indian authors and high-cited papers. The present study assessed benchmarking of research output for the period between 1991 and 2011 using Web of Science database from the Thomson Institute for Scientific Information (ISI), research in the field of Leishmaniasis was evaluated. It was found that India's global publication share in leishmaniasis chronic disease during the study period was 9.36% (with 1162 entries) and it ranked 3rd among the top 27 countries in leishmaniasis. The highest output during the 21 years period was 2011 with 14.20% and lowest 1.38% reported in the year 1992, The international share of collaborative papers was 44.66% and average citation per paper was 14.53. India was behind USA and Brazil in terms of publication output in leishmaniasis. It is concluded that India is in a good position in the world in terms of publication output, citation quality and share of international collaborative papers in leishmaniasis during study period though the central hub of research cooperation is USA.

Keywords: Leishmaniasis, India, Chronic disease, Bibliometric analysis

Using Funding Acknowledgements to Observe the Pattern of International Collaboration: The Pilot Study on Publications Partially Funded by Taiwanese Funding Agency

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To explore unknown research fields or solve the problems related to life of human beings and the whole society to take social accountability, large-scale international collaboration is a necessary ways to reach the goal. Since big science needs big budgets and big staffs, large-scale international collaboration has been formed by many researchers coming from different countries eventually, hence, it is prone to get funding from multiple sources. Traditionally, funding acknowledgement is considered as the approach to measure the ratio of inputs to outputs, it also can be the method to figure out the process of knowledge production and how these researchers conduct their research projects. This study utilizes the funding acknowledgement to get the details of research projects granted by National Science Council (NSC) in Taiwan and attempts to conduct data mapping from the funding information and bibliographic information to observe their pattern of international collaboration and in order to understand which funding agencies provided support to these large-scale research projects. The result of pilot study may help to understand the structure of international collaboration better and provide some ideas about how to help these research institutes collaborate more smoothly and think the feasibility of signing research collaboration agreements with foreign funding agencies to strengthen international collaboration.

How well do newspapers describe scientific research? ---An Investigation into the Correlation of Press Releases and Newspaper Articles

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We analyze the frequency at which press releases from universities form the basis of articles in newspapers. The number of universities that have been publishing press releases has been growing. Moreover, the number of newspaper articles on the university sector has also been growing. Here, we study the relation between press releases and newspaper articles and consider the effectiveness of press releases as a way for universities to publicize research results.

Iran's scientific Interactions and Communications with the G8 Countries

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In recent years various researches have conducted about scientific cooperation by researchers. This study aims at examining amount of scientific cooperation between Iranian researchers and researchers of 8 developed countries in Scopos database during 1999-2011.This is a survey-descriptive research, and employs scientometric method. In the present study, Situation of knowledge production in Iran and group 8 countries and their cooperation in producing scientific papers was analyzed. Findings show that during study period scientific cooperation between Iran and group 8 countries have increasing trend and has 26% growth rate after 2004. Tehran University, Sana'ti Sharif and Tehran Medical University have the highest scientific cooperation with these 8 countries. Researchers in engineering, medical sciences, physics and astronomy have published highest common articles. Most of these works are in English language and more than 92% are articles in journals or conferences.

Keywords: Scientific Collaboration, Iran, G 8 Countries, Scopus Database, Scientometric

The Obstacles and Solutions for Group Work and Scientific Cooperation in Iran

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The expansion and the complexity of different domains of science, researchers' joint activities and the need for combining diverse specialties for answering increasing questions have rendered group work and scientific cooperation a seminal and important feature of the scientific society. Scientific cooperation among researchers leads to synergy. In fact, scientific cooperation is the reflection of society' scientific activities. There are potential capacities in group scientific activities, which do not exist in individual activities, and if these activities are managed properly, they can be effective. The question which raises here is that if group work leads to the growth and development of research activities, why the formation of research teams for conducting group work receives less importance than it deserves; in other words, what are the obstacles in the way of group work in research areas? In this article, we shall attempt to find an appropriate answer to this question. In this study, first the necessity of scientific cooperation in academic researches is presented and then barriers of group works and scientific cooperation are determined. Finally solutions are presented for these problems. It is hoped that analyzing barriers and problems and presenting solutions facilitates scientific cooperation.

Keywords: Scientific cooperation, teamwork, obstacles research teams, strategies of research teams, co-author, Iran.

NATIONAL ORIENTED STUDIES Part II

The University and Industry Relation in Turkey: The Case of Chemistry Field

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It is known that, one of the most common sectors in patent and utility model field is "manufacture of chemicals and chemical products" in Turkey. In this context, the publications of Turkey in the field of chemistry between 2008 and 2012 have been evaluated and associated with patent and utility model applications. Firstly, the relationship between patents and scientific publications in the field of chemistry has been defined. Then co-authorship of publications were analyzed to assess in the concept of collaboration with university-university or university-institution (non-university). This work investigates university- institution collaboration in Turkey in the field of chemistry applying a bibliometric analyse. The aim of this study is to investigate the reflections of the development in patent sector on scientific publications.

Keywords*:* University- University Collaboration, University- Institution Collaboration, Patents, Bibliometrics, Turkey, Chemistry.

Mapping of Indian Social Science Literature

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In this paper an attempt has been made to map social science literature. The mapping of knowledge domains has been done in order to understand the positions of its various subfields and their relative position. The Social Science forms a very vast field and comprises number of subfields or disciplines. The different schemes of classification systems have been used to locate the position of each subject which comes under social science namely DDC, CC, UDC, and Web of Science. The visual representation of the same has been depicted in order to understand the relation of each sub disciplines of social sciences. Identified the Growth of Literature and Author Productivity.

Bibliometric Study of Scientific Publications from India

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Scientific publications are an important indicator of research performance in a country. The publication trend and impact of publications as measured by citations received in that year give the dynamics of research system. Recent studies have shown the increasing research contribution of the emerging economies (like China, S. Korea, India and Brazil) in the publication activity. Recent study by DST (2012) and Thomson Reuters (2011) has shown that Indian science and technology machinery moving ahead with some credible pace. Earlier study by DST (2010) has also shown similar results about the growth and impact of papers from India. According to the study, number of publications and percentage of high impact papers from India (in year 2006) is quite less compared to the USA, UK, China and S. Korea but change (from 1997) in amount is higher from the USA and UK. Another study by B.M. Gupta and S.M. Dhawan (2006) explores the measure how India's research strengths are developing and to map how the geography of Indian research and innovation is changing. According to this report India's science is growing in both output and quality, during the last decade. These studies did highlight the status of Indian science and technology in terms of research output during different periods. Some of these studies developed indicators on institutional productivity, scattering across Indian and foreign journals, quality of research, and nature of collaboration, etc. The present study shows further insights of India's publication activity. This study examines to what extent the picture is changing in terms of impact of papers.

Library Automation : An indian perpective

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Libraries very important role of enhance and progressive of knowledge academic libraries plays an important role in providing all library service to student and user. The computer helps to provide fast and reliable access to the resources available in the library. Computers are not only used as a tool for processing the data, but also for data storage and accessing. Automation of function aims at automating almost all technical and user based function like collection, budgeting, serial collection, retrieval, circulation, acquisition, storage and dissemination of information. Library automation helps in managing diverse library resources and provides better and wider access to the resources.

Keywords: automation, automation software, policy of automation.

THEORETICAL APPROACHES and METHODOLOGY

New Metrics, a Chance for Changing Scientometrics A Preliminary Discussion of Recent Approaches

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Since a couple of years we can observe a discussion about development of improved metrics for science evaluation. Main aim is to objectify the process of evaluating scholarly results and their impact on science policy for e.g. funding decisions. This discussion is forced by drastic change of the 300 year-old modus operandi of science communication as a result of the increased utilization of technologies, tools and platforms of the Web2.0 and the Semantic Web ecosystem. In this paper we analyze recent approaches in development of New Metrics and propose a structured view with the help of a morphological box.

Analysis of evolutions and interactions between science fields: cooperation between feature selection and graph representation

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The development of dynamic information analysis methods, like incremental clustering and novelty detection techniques, is becoming a central concern in a bunch of applications whose main goal is to deal with large volume of textual information which is varying over time.

The purpose of the analysis and diachronic mapping is to track, for a given domain, changes in contexts (sub-themes) and the evolution of vocabularies and actors that materialize these changes in terms of appearances, disappearances, divergence or convergence. The applications relate to very various and highly strategic domains, including web mining, technological and scientific survey.

We present here an original word-based approach using feature maximization metric (Lamirel & al. 2013) in order to detect significant differences between two time periods for the same scientific field, but also to detect transdisciplinary terms that are markers of cross-domain scientific collaborations. We show that our approach is also applicable to the authors (i.e. actors) allowing quickly highlighting those that are "bridges" between scientific fields.

The concept of transdisciplinarity is often discussed (Do Espirito Santo 1979) in conjunction with its facets that are interdisciplinary, multidisciplinary, pluridisciplinarity (Zaman & Goschin 2010). Unlike common approaches based on graph analysis (Porter & Rafols 2009) (Leysdesdorff 2007) (Sayama & Akaishi 2012), we are tackling the problem using a classification of documents (in scientific fields) in combination with a selection of features (index keywords) associated with document classes. Only then, we construct a graph visualizing the interaction between keywords and classes using links weighted by values of contrast defining the strength of the relation between these latter. Feature selection and links contrasting are based on the feature maximization metric (F-max) that has been already successfully used in an unsupervised context.

The Evolution Pathway, Hotspots and Fronts Study on Interdisciplinary

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To trance the evolution pathway, reveal the research hotspots, and research fronts of interdisciplinary research, scientometric and informetric methods were employed in this study. From the Web of Science database, papers using in the topic word interdisciplinary from 1950 to 2012 were listed as the study objects. Then the metadata was visualized in a number of co-citation maps through the knowledge visualization tool Citespace III to identify critical node documents during the evolutionary history of interdisciplinary research. The research hotspots and research fronts were also analysed using Citespace III's keyword clustering and burst terms detecting functions. Ten key articles reflecting the evolution pathway of interdisciplinary research, more than two main clusters and top twenty burst terms identify the research hotspots and research fronts. It was found that research perspective and approach are two mainstreams words of interdisciplinary. Interdisciplinary related keywords are current research hotpots and represent future directions of interdisciplinary development/research. In addition, interdisciplinary are research areas with some promising prospects.

The Evolution of Information Systems as a research field

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This contribution explores the development of the (management) information systems literature between 1991 and 2011. We combine a cognitive dynamic-structural analysis to a dataset of 5,700 SSCI papers. Ten clusters are identified drawing on textual and link similarities. Unlike in earlier contributions, the lexical component is extended to encompass phrases rather than individual terms. We observe some notable changes with respect to how IS subject areas relate to each other. Technology acceptance models have been one of the strongest areas of growth. Knowledge management, in particular the topics of knowledge acquisition and sharing have also received increasing attention whereas online auctions is an entirely new topic that has emerged in recent years.

WORLD WIDE WEB, WEBOMETRICS and NETWORKING

Discovering scholarly communication on Twitter through keyword searches

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Social media are changing the way we communicate with our friends and our colleagues. In academia various social media sites are being used for various purposes. One of these social media sites that researchers are increasingly using is Twitter. Twitter enables rapid sending of short messages to a group of followers, and hence Twitter could be an efficient tool in sharing research information and in conversations about research work. The present study investigates how well keyword searches could be used to identify and collect scientific content on Twitter. Both qualitative and quantitative methods were used. The results indicate that keyword searches can be used to identify scientific content but how accurate keyword searches are is influenced by the specific vocabularies of different research areas. The present research also demonstrates methods to map and analyse content of tweets.

Collaboration Studies in Turkey: A comparison of Web of Knowledge With Scopus

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As it is known, Web of Knowledge is a comprehensive database that has enabled bibliometric studies for over 5o years. However, Scopus, launched in 2004, is another comprehensive and large database that has triggered competition in the sector. From this point of view, publication and collaboration patterns in Turkey are compared using the two databases and the general profile of Turkey is defined regarding the increase in scientific publication and co-authored studies.

Keywords: Bibliometry, collaboration studies, co-authorship, Scopus, Web of Knowledge

Library Collaboration Through Networking In India: An Overview

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This paper discusses the library networking in Indian scenario. The concept of library networking to aid information resource sharing and support activities in libraries has become a real necessity in India. The present study briefly highlights some of the major library networks in India. The objectives, functions, services, future prospects and stages of completeness of these library resource-sharing networks are also discussed. The Indian information professionals, education specialists and scientists have realized that the time has come to share the information resources and to coordinate mechanisms. This has resulted in discernible change in the information in India. A large number of library resource sharing networks like the Metropolitan Area Networks such as DELNET in Delhi, MALIBNET in Madras, BONET in Bombay, PUNENET in Pune, CALIBNET in Calcutta HYLIBNET in Hyderabad, ADNET in Ahmedabad, and countrywide ones like INFLIBNET (Universities and Research Institutions), ERNET (Educational and Research Institutions), and DESINET (Defence Laboratories), and sectoral ones like BTISNET (Biotechnology Networks) etc. are under various stages of conceptualization, design, development and implementation. The article draws its conclusion by briefly mentioning the obstacles to the development of these networks.

Keywords: Library Networks; Library resource sharing; Network Development and Inter Library Loan

CITATIONS, EVALUATION

Month-by-month analysis of biomedical publications and citations and the effect of different citation time windows

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This paper examined the distribution of biomedical papers' publication dates within a year because we hypothesised that papers published in January would typically receive more citations than ones published later in the year. It turned out that there was a small excess of papers in January, and that a few journals published more than twice as many in that month as expected, and so gained an advantage in terms of their impact factors. Citation scores of papers from different months showed a clear and consistent pattern, with scores decreasing by 9.6% per month for a two-year window, 4.4% per month for a three-year window, and 2.8% and 2.1% for four- and five-year windows. Corrections to citation scores make imperceptible changes to the ranking of universities, but can have some effects on the order of merit of individual researchers, who publish tens rather than hundreds of papers in a given period.

Where does author self-citation occur? A citation context analysis

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This research attempts to identify the difference in occurrence frequencies and locations between author self-citations and citing others in scientific articles. 600 sample articles from 20 key environmental engineering journals published between 1999 and 2008 were analyzed manually to identify the location of author self-citations or citing others appearing in the introduction, methods, results, and discussion/conclusion. The results show that self-citations are more common than citing others in the methods, results, and conclusion sections. It confirmed the persistence between original articles and references under the linkage of author self-citations. The self-citations or citing others in different locations of a journal article have varying strengths of mutual exclusion. The results suggest that for surveying the self-citing rationality, each article's introduction section could be a priority target.

How to address the role of a journal as a knowledge transfer vector between disciplines? A case study relying on citations analysis

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Science and technology (ST) journals are a usual diffusion support for scientific results, in which researchers submit their works to peer evaluation and supply them to reuse by a scientific audience. In this diffusion process, each journal plays the role of a knowledge transfer vector. If we hypothesize that a journal has an observed audience perimeter either limited to its own scope or bridging the gap between its scope and other disciplines, then we address the issue: can we formalize a typology in order to characterize its knowledge transfer vector role? Can the analysis of *ex ante* citations (bibliographies of the articles published in the journal) and *ex post* citations (reuse of the journal articles) help us to detect how wide the perimeter of the journal audience is?

The approach we undertake in this work is directly inspired on the methodology we developed within the framework of the European project DBF (Hörlesberger *et al*., 2013), the goal of which was to support the selection process of research projects submitted for financing to the ERC (European Research Council). We have produced an analytical methodology based on the informetric modeling of criteria used by ERC scientific experts. For this purpose, indicators were elaborated in accord with the strategic definition of frontier research by the ERC. In particular, an indicator was devised to characterize any project that "…*stands at the forefront of creating new knowledge… is responsible for fundamental discoveries… achieves occasional revolutionary breakthroughs…*." (EC, 2005), that we defined as innovativeness. To this end, we studied the evolution of a scientific domain, using clustering techniques that generate a representation of the publication scientific landscape based on its extracted terminology, with a diachronic analysis of clustering results (Roche *et al*., 2011).

In the present work, we do not focus anymore on the evolution of a particular scientific field but on the comparative analysis of two landscapes built from a given ST journal: the former consists of the cited references, extracted from the bibliography, of all its publications in a given year; the latter consists of any article, published in any journal, that cites articles of the studied journal published in the said given year.

As with a "spot the difference" game, we aim at answering the question: is there a difference between those two landscapes in term of scientific field representation? Specifically: does the second landscape include only fields already present in the first one, or conversely, display new fields? This diachronic analysis will help us define if the journal plays its role of knowledge transfer vector either exclusively within the restricted perimeter of its original scope or also beyond the frontier defined by this perimeter.

TECHNOLOGY ORIENTED STUDIES

Effects of Knowledge Network Modularity on the Utility of Inventions in Semiconductor Industry

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Previous studies have paid more attention on the modular architecture of product and organization, but the structure of technological knowledge networks has not received the same attention. This paper aims to examining the effects of knowledge networks modularity on the utility of inventions at industrial level empirically. Based on USPTO semiconductor-related patent data from 1976 to 2000, it first measures the modularity of knowledge networks and utility of inventions quantitatively, and then examines the relation between modularity and utility of inventions using Granger causality test. It is found that a long-term and stationary relationship between knowledge network modularity and the utility of innovation in the semiconductor industry and knowledge network modularity has a positive effect on the utility of invention.

Re-exam contribution of academic researchto development of industrial Technologies

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Universities continue to beseen as organizations dedicated tocreation and dissemination of knowledge. The role of universities in fostering technology transfer and economic growth is still considered to be a vital element of scientific and technological development.The results from previous studies showed that the universities were encouraged to devote theresources into innovation and the outcomes were not only presented in the academic researches, but also shown in activities of gaining intellectual property rights for the research output under the influence of Bayh-Dole-like acts(Baldini, 2006; Baldini,Grimaldi & Sobrero, 2006; Lo, 2008; Lo, 2012; Mowery & Ziedonis, 2002; Mowery, Nelson, Sampat & Ziedonis, 2001; Shane, 2004).
The research performance was presented by counting granted patents to show the progress of universitypatenting activities. In this study, the author further examined share of patents granted to universities to gross patents to demonstrate the contribution of universities to industrial technologicaldevelopment.Patents granted to Taiwanese universities by Taiwan Intellectual Property Office (TIPO) and United States Patent and TrademarkOffice (USPTO) from 2000 to 2010 were identified to be seen as tokes for universities contribution to the developmentof industrial technologies and the cited status was used to present the spillover of university research output.

Keywords: University Patenting, Academic research, Industrial Technology, Contribution Index

Patent Analysis of Hydrogen Storage Technology

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Researchers from both public and private sectors devote their research effort to find alternative energy to release the pressure of diminishing of fossil energy, global warming and economic depression.Hydrogen energy is one of the alternative energies, which attracts attention from both sectors as a result of environmental friendly, non-toxic and pollution-free. Two technologies involved with manufacturinghydrogen energy, production and storage. To increase use of hydrogen energy, affordable costof production, distribution andmanufacturing is the key issue, and hydrogen storage system takes a key role in the process. In this study, the authorstook patent bibliometrics approach to reviewed patents, whichrelate to hydrogen storage technologies to reveal the progress of hydrogen storage technologies.The following research questionswere tried to be targeted in this study,
--Productivity and distribution ofhydrogen storage technologies research, including the development trends, productive entities and major technologies
--Technologies influence development of hydrogen storagetechnologies, including influentialentities and technologies
--Scientific linkage of hydrogen storage technologies research, including impact of basic research on hydrogen storage technologies, major academic researchers and research Works.

Keywords: Hydrogen Storage, Hydrogen Energy, PatentBibliometrics, Patent Analysis

17th of August

POSTER SESSION

Understanding Institutional Collaboration networks: Computer Science vs. Psychology

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Institutions assume that if they are more productive (i.e., publish more papers), they will produce more high quality research. They also assume that if they collaborate more, they will be more productive. We test these causal assumptions using nearly 30 years of worldwide publication and citation data in Computer Science and Psychology. Four quality metrics, three collaboration metrics and one productivity metric were used. Spearman's Rank Order non-parametric correlation shows that these three groups of variables are highly inter-correlated. Regression analysis was used to partial out the effect of the third variable and reveal the independent correlation between each pair of the variables.
In Computer Science, the more productive institutions publish higher quality research as measured by citation counts (including citation counts recursively weighted by the citation counts of the citing institution); the effect is the same, but not as strong, in Psychology. Higher average paper quality in both Computer Science and Psychology are more likely to be a result of greater institutional collaboration than of higher institutional productivity. The proportion of the institutional collaboration is closely linked to institutional quality and productivity. The more proportionally collaborated institutions in fact are less qualitative as well as less productive.

Diffusion of Expectation in Science and Technology – Citation Patterns of the Global Stem Cells Market Size in Korean Newspapers

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The role of expectations in the development of science and technology has been receiving the attention by some disciplines, especially the sociology of expectations in science and technology. In early stage of scientific and technological process, various expectations are competing for the future reality from particular science and technology. They include technological possibilities, ethical issues and solvability of social issues with technology, and these expectations divide into optimistic or pessimistic positions.

The important thing is that market forecast is a cohesive and represent expectation summing up various other expectations. Market expectations are collective and reflect how various expectations are realized in the market. They play a role as a promoter for social investment toward relevant science and technology, e.g. the rationale of public funding.

In Korea, stem cell research has been the target of strategic R&D investment by Korean government. Korean government established the national plan for stem cell research after the “Hwang Scandal” and has announced annual action plan for stem cell research since 2007. At that time there were various estimates for stem cell market size, but Korean government selected an optimistic estimate for action plan since 2009. This estimate which government picked up has functioned as the rationale of government investment in stem cell R&D. The optimistic forecast for stem cell market which government selected has been reported in Korean press until now. After 2010 most institutes modified market estimates for stem cell market size lower compared to early optimistic estimates, but the rosy prospects for stem cell market dominate Korea so far.

This study investigated the diffusion process of optimistic market size in Korean newspapers. In conclusion, we identified the diffusion process of market expectations resemble the spread of an epidemic disease and government reports are kinds of carriers of social contagion in citation network. We discovered some characteristics for the diffusion of expectations in Korea as follows. First, the optimistic market expectation of stem cell has proliferated through government report over newspapers. Second, the process of indirect quotation which the press cited the optimistic estimate from government report was the process which omitted concrete context enabling original optimistic estimate. Finally, the source and citation of the optimistic estimate disappeared in newspaper and a particular estimate became a symbol for positive future.

Ranganathan today: a citation study

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Using citation analysis we investigated the presence of S. R. Ranganathan's work in the modern scientific literature. We found that during the past twenty two years nearly 400 papers cite at least one piece of Ranganathan's work, significantly more than in the preceding fourty years. There is much evidence for a sustainable pervasion of modern science by Ranganathan's work and ideas.

Measurement of Converging Sciences and its Policy Implications--- A Case Study on Global Climatic Studies

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Science converging is the inevitable trend of science advancement in the 21th century. We can explore the status and development trend from the quantitative aspect by using visual technique and statistics of subject category. Our measuring results show that the subject category of global climatic studies is mainly distributed in natural sciences, social sciences and multidisciplinary areas. The number of subject categories appear to have had an obvious increase matching that of papers both in SCI and SSCI databases. In this mega-science era, we should enhance communication and collaboration among different scientific subjects, so as to achieve rapid development and major breakthroughs in science.

Keywords: converging sciences; measurement; visualization; mapping knowledge domain climate topic; citespace

Clustering Analysis in Green IT Using Patent Information

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IT industry that used to focus on information and digitization is now evolving into green IT, after the concepts of carbon emission reduction and energy efficiency have been added. In Korea, with advanced IT infrastructure, green IT is emerging as a steppingstone for a new leap. The rate of electric power consumed by the IT industry out of total industry power consumption is increasing every year from 12% in 2003 to 17.15% in 2007. Therefore, in this study, we will analyze the association between detailed segments in green IT by analyzing patent IPC information in green IT field, using CNM clustering method.

Technology Relevance Analysis between Wind Power Energy -Fuel Cell - Green Car using Network Analysis

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Many countries in the world are rapidly moving toward the “Green Economy”, reducing CO_2 emission, and the competitiveness of a growth model that requires a large amount of input of fossil fuel like oil and gas is greatly declining due to weather change and energy price instability. Nuclear power plant accident from a big earthquake in Japan increased concern about the use of nuclear energy, once appreciated to substitute existing fossil fuel. To resolve this concern and cope with fossil fuel depletion, renewable energies like wind power energy and fossil fuel replacement cells are being developed, and it is projected that research and development to use the electricity produced by renewable energy will be continued.

Recently, green technologies are being developed through technology convergence, and industry areas are expected to be reorganized through technology convergence. In this study, we analyzed the associative relation between green technologies using patent information and the representative technology information. Particularly, number of association between 8 items included in 3 areas (wind power energy, fuel cell, green car), similarity between 8 items, network association between 8 items and IPC (International Patent Classification), degree centrality and betweenness centrality were comprehensively considered to decide priority of research and development core technology for industry activation.

Automation of Exhibition Activity Management as a Tool for the Intensification of International Science and Technical Cooperation

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Accelerated development of foreign economic activity, enforcement of international cooperation with universities, research institutions and companies of foreign countries is defined today as the most important trend of the scientific and technological policy of the Republic of Belarus. It is destined to overcome the alienation of research groups of our country from the realm of science and markets of scientific and technological products of foreign countries. International scientific and technological exhibitions (fairs) have become one of the most effective forms of international cooperation within the area of innovations.

The development of exhibition activity in the structure of high school in Belarus started in 1998, when in accordance with the decision of Board of the Ministry of Education of the Republic of Belarus to organize Interuniversity Center for Marketing of R&Ds in the SSPC "Metolit" (the original name of the Scientific and Technological Park BNTU "Polytechnik"), was established advertising and exhibition department. Its objectives were: to conduct marketing researches; to prepare expositions of exhibitions and to participate in exhibitions; to organize post-exhibition activity on the made contacts; to conduct research works.

However the globalization of innovation processes, the need of constant information updating and improvement of the exhibition activity management processes of higher educational establishments and small enterprises at universities, have provoked the necessity to automate the process of innovation promotion through exhibitions. So, in 2010 Scientific and Technological Park BNTU "Polytechnic" with the purpose of organization of exhibition activity of higher educational establishments of the Ministry of Education of the Republic of Belarus has created multifunctional informational and analytical resource – Automated system for monitoring of international exhibition activity (ASM REA).

Internet Resources for Information Support of Research and Innovation Activity and Technology Transfer in the Republic of Belarus

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The most important step in the formation of a national innovation system is the creation of a system for information support of all innovation phases. The condition of R&Ds success is the proper provision of information, which is carried out by specially created information systems and services. These systems and services collect, systematize, store, process, search, and distribute scientific, technical, economic and other information.

Development of the innovation infrastructure of the Ministry of Education of the Republic of Belarus stimulates the activization of scientific and innovative activityy of universities. The created information and analytical network on R&Ds of the higher education institutions covers the centers of technology transfer and the regional marketing and innovative centers as a unit. The centers of bilateral cooperation are formed. These allow to transform results of researches and developments to a commercial product much more effectively, to expand the international transfer of technologies. The increase in scales of the market, strengthening of the competition resulted in need of continuous innovative development of the enterprises, interactions of commercial subjects with a science, including the international level, investments into perspective projects. The practice shows that the traditional approaches which are successful for advance on the market of the majority of good types can be not always applied at representation of new scientific and technical products. The main feature consists in the specificity of a product. Introduction of scientific and technical products demands considerable expenses, and also is characterized by high risk of "non-acceptance" of a new product by the market. Therefore there is used the so-called «introductory marketing» at early stages of advance of this type of production, when first of all it is necessary to acquaint users with the main features, technologies, possibilities of use of a scientific and technical product. Use in these purposes of the Internet possibilities is one of the most modern and effective ways of the organization of scientific and technical cooperation at the national and international levels, providing the export growth.