

CONTENT ANALYSIS OF “THE AMERICAN OIL CHEMIST’S SOCIETY JOURNAL”

Dr. Shashank S. Sonwane* **Mohd. Furquanullah Mohd. Ikramuddin****

***Assistant Professor**

Dept. of Library and Information Science
Dr. Babasaheb Ambedkar Marathwada University
Aurangabad, Maharashtra State, India

****MLISc. Student**

Dept. of Library and Information Science
Dr. Babasaheb Ambedkar Marathwada University
Aurangabad, Maharashtra State, India

QR Code



ABSTRACT: - *This paper attempts to highlights the quantitative assessment of status of the Journal by way of analyzing the various features of Journal “the American Oil Chemist’s Society”. During 2010-2014 a total of 1068 Articles were published in the Journal “the American Oil Chemist’s Society” by researchers in various countries.*

KEY WORDS – *Authorship Pattern, International Collaboration Pattern, Communication Channels,*

1 INTRODUCTION

Content analysis is rapidly becoming less of a tool to be used in the experimental manipulation of the communication process. In these instances of experimental studies, systematic changes in content are made and documented through content analysis, and the audiences are observed for the effects of these changes.

The specific role to be played by content analysis in organizing for recall the world’s store of recorded knowledge. Content analysis appears to have two general and major functions. The first is to provide the descriptive abstract of any document at a level and of such a nature as will indicate what information may be found in it. The second is to provide guidelines in transforming document content from one medium to another

and in reducing content for ease of bibliographic access.

The “the American Oil Chemist’s Society” is an international, peer-reviewed journal published monthly that aims to its readers with a unique forum for the exchange and sharing of information in social economics.

2 OBJECTIVES OF THE STUDY

The main objective of the study is to analyze the content of Journal of “the American Oil Chemist’s Society” and make the quantitative assessment of status of the Journal by way of analyzing the following features of Journal

1. To find out year-wise growth of publications,
2. To find out Geographical distribution of research output,
3. To find out the authorship and collaboration pattern in the publication,
4. To find out the extent of international collaboration,
5. To find out the most productive authors in the field,
6. To find out organization – wise distribution of publication,
7. To find out the channels of communications used by the scientists and

8. To find out the high frequency keywords appeared in the channels of communication.

3 SCOPE & LIMITATION OF THE STUDY

Scope of study is restricted to the “the American Oil Chemist’s Society” published during 2010 to 2014. The papers presented in the Journal are analyzed using content analysis technique.

The present study is limited to the total numbers of 1068 papers published during 2010 to 2014.

4 HYPOTHESIS OF THE STUDY

The study consists of following hypothesis:

1. Authorship trend is towards multiple authored papers.
2. USA is the high productive country.
3. Majority of the affiliated Institution are from USA.

5 ANALYSIS OF “THE AMERICAN OIL CHEMIST’S SOCIETY”

In views of the objectives of the present study, analysis of “the American Oil Chemist’s Society” is presented further (the American Oil Chemist’s Society, 2014).

5.1 YEAR-WISE PUBLICATION PRODUCTIVITY AND COLLABORATION RATE

The word publication means the act of publishing. Productivity refers to measures of output from production processes, per unit of input. Collaboration is a recursive process where two or

more people or organizations work together toward an intersection of common goals

Table 5. 1: Year-Wise Publication Productivity and Collaboration Rate

| Year | Single Author | Multi author | Total Publication | Collaboration Rate |
|-------|---------------|--------------|-------------------|--------------------|
| 2010 | 9 | 166 | 175 | 0.95 |
| 2011 | 4 | 227 | 231 | 0.98 |
| 2012 | 10 | 224 | 234 | 0.96 |
| 2013 | 3 | 207 | 210 | 0.99 |
| 2014 | 4 | 214 | 218 | 0.98 |
| Total | 30 | 1038 | 1068 | 0.97 |

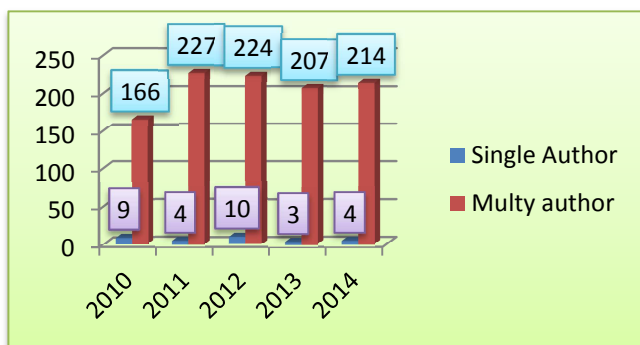


Figure 5.1: Year-Wise Publication Productivity and Collaboration Rate

It can be observed from Table No.5.1 & figure No. 5.1 that during 2010-2014 a total of 1068 Articles were published in the Journal Of The American Oil Chemist’s Society by researchers in various countries.

5.2 GEOGRAPHICAL DISTRIBUTION OF RESEARCH OUTPUT

Geographical distribution of research output means the article published from different

countries. In political geography and international politics, a country is a political division of a geographical entity. Frequently, but not exclusively, a sovereign territory, the term is most commonly associated with the notions of both state and nation, and also with government.

Table 5.2: Country-Wise Distribution of Articles

| Sr. No. | Name of the Country | Publications | Percentage | Rank |
|----------------|---------------------|--------------|------------|------|
| 1 | USA | 927 | 21.15 | 1 |
| 2 | China | 520 | 11.87 | 2 |
| 3 | Canada | 234 | 5.34 | 3 |
| 4 | Spain | 215 | 4.91 | 4 |
| 5 | Brazil | 209 | 4.77 | 5 |
| 6 | India | 209 | 4.77 | 6 |
| 7 | Japan | 173 | 3.95 | 7 |
| 8 | Malaysia | 156 | 3.56 | 8 |
| 9 | Turkey | 147 | 3.35 | 9 |
| 10 | Korea | 117 | 2.67 | 10 |
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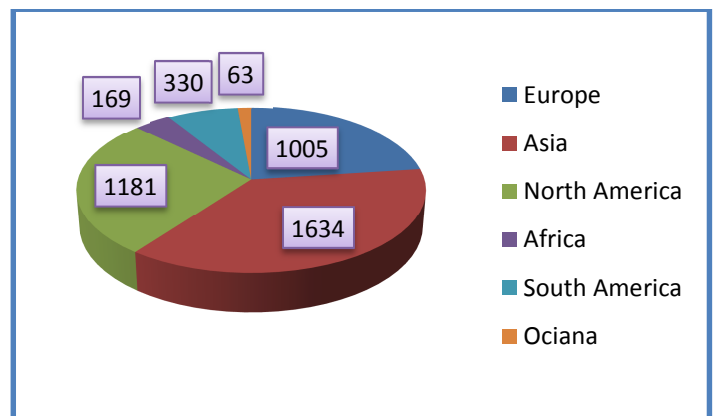


Figure 5.2: Country-Wise Distribution of Articles

It can be observed from Table No 5.2 and Figure No. 5.2 that, there were as many as 74 countries carrying out research and produced 1068 articles. Table no.2 provides ranked List of countries contributing to this field, the number of

publications of each country and their share in percentages is the top producing country USA with 927 publications (21.15) of the total output. Therefore, the hypothesis, “USA is the high productive country” (Hypotheses No.2) is valid. It can be stated that USA being the publishing country the output is more than other country.

5.3 AUTHORSHIP AND COLLABORATION TREND:

Gupta, D.K.⁽⁴⁾ Authorship is an observable phenomenon reflecting the contemporary scholarly practices clearly showing the communication, productivity and collaborative patterns and influences among researchers even though their quantities and qualities are not well understood.

Collaboration in research is said to have taken place when 2 or more persons work together on a scientific problem of project and effort, both physical and intellectual.

Table 5.3: Authorship and Collaboration Trend

| Year | Single Author | Number of papers with various authorship | | | | | Total Publication |
|------|---------------|--|----|----|----|----------------|-------------------|
| | 1 | 2 | 3 | 4 | 5 | More than Five | |
| 2010 | 9 | 29 | 38 | 46 | 26 | 26 | 175 |
| 2011 | 4 | 46 | 57 | 45 | 36 | 43 | 231 |
| 2012 | 10 | 41 | 54 | 43 | 41 | 45 | 234 |

| | | | | | | | |
|--------------|-------------|--------------|--------------|--------------|--------------|--------------|------|
| 2013 | 3 | 35 | 41 | 46 | 27 | 58 | 210 |
| 2014 | 4 | 28 | 57 | 41 | 35 | 53 | 218 |
| Total | 30 | 179 | 247 | 221 | 165 | 225 | 1068 |
| % | 2.81 | 16.76 | 23.13 | 20.69 | 15.45 | 21.07 | 100 |

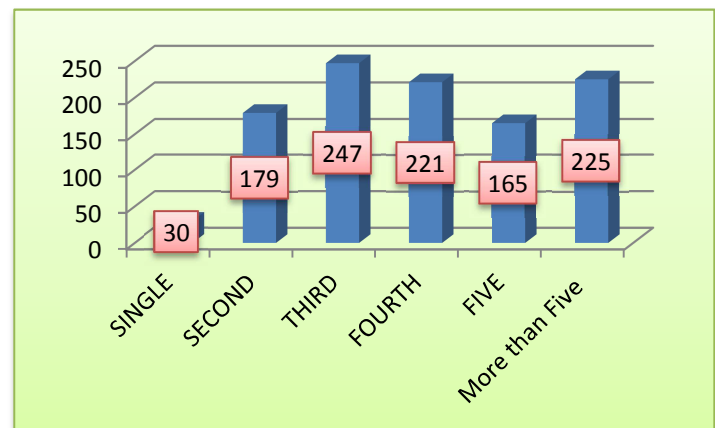


Figure No. 5.3: Authorship and Collaboration Trend

It can be observed from Table No.5.3 and Figure No.5.3 that, year-wise authorship and collaboration trend is given in table 3. Authorship trend is towards multiple-authored papers. Single authored papers accounted for 30 (2.81%). Therefore, the hypothesis, “Authorship trend is towards multiple authored papers. (Hypothesis No.1) is valid.

5.4 INTERNATIONAL COLLABORATION PATTERN OF ARTICLES

The International collaborative production of articles is the simultaneous action of many people who try to combine their ideas to make a new one. In fact “collaborative” is the process where two or

more people work together toward a common goal and they don't required leadership.

Table 5.4: International Collaboration Pattern of Articles

| Year | No. of Countries | | Total No. of |
|--------------|------------------|---------------|--------------|
| | Single | Collaboration | |
| 2010 | 147 | 28 | 175 |
| 2011 | 190 | 41 | 231 |
| 2012 | 211 | 23 | 234 |
| 2013 | 171 | 39 | 210 |
| 2014 | 181 | 37 | 218 |
| Total | 900 | 168 | 1068 |
| % | 84.27 | 15.73 | 100 |

The distribution of the collaboration of the various countries and their institutions respectively are given in the further table.

5.5 MOST PRODUCTIVE AUTHOR

An author is defined both as “the person who originates or gives existence to anything” and as “one who sets forth written statements” in the Oxford English Dictionary.^[24]

Table No. 5.5: Most Productive Author

| Sr. no. | Authors Publication | Country | Publication | Percentage | Rank |
|---------|---------------------|---------|-------------|------------|------|
| 1 | Tong Wang | USA | 22 | 0.50 | 1 |
| 2 | Casimir C. Akoh | USA | 17 | 0.39 | 2 |
| 3 | Xuebing Xu | China | 15 | 0.34 | 3 |

| | | | | | |
|----------------|-----------------------|---------|----|------|---|
| 4 | Xingguo Wang | China | 14 | 0.32 | 4 |
| 5 | Andrew Proctor | USA | 13 | 0.30 | 5 |
| 6 | Jill K. Winkler-Moser | USA | 11 | 0.25 | 6 |
| 7 | L. A. Johnson | USA | 9 | 0.21 | 7 |
| 8 | Zheng Guo | Denmark | 9 | 0.21 | 7 |
| 9 | Hong-Sik Hwang | USA | 8 | 0.18 | 8 |
| 10 | Qingzhe Jin | China | 8 | 0.18 | 8 |
| Truncated..... | | | | | |

It can be observed from Table No. 5.5 that, the most productive authors are Tong Wang (USA) who had the highest number (22) of the publication. one Authors with 17 publication, one Authors with 15 publication, one Authors with 14 publication, one Authors with 13 publication, one Authors with 11 publication, two Authors with 9 publications, 3 Authors with 8 publications, 6 Authors with 7 publications. Table gives a list of Authors appeared in the articles.

5.6 INSTITUTES WISE DISTRIBUTION OF ARTICLES PUBLISHED

Institution is a society or organization for the promotion of science, education etc. ⁽⁵⁾ .An institute is a permanent organizational body created for a certain purpose. Often it is a research organization (research institution) created to do research on specific topics. An institute can also be a professional body. In some countries institutes can be part of a university or other institution of higher education, either as a group of departments or an autonomous educational

institution without a classic full university status such as a University Institute.

Table 5.6: Institutes wise distribution of articles

| Sr. no. | No. of the Institution | No. of Publication | Rank |
|---------|---|--------------------|------|
| 1 | Department of Food Science and Human Nutrition, University of Illinois, 1302 W. Pennsylvania Avenue, Urbana, IL, 61801, USA | 61 | 1 |
| 2 | Halal Products Research Institute, Universiti Putra Malaysia, Selangor, Malaysia | 22 | 2 |
| 3 | Department of Food Science, University of Guelph, Guelph, ON, N1G 2W1, Canada | 21 | 3 |
| 4 | Center for Crops Utilization Research, Iowa State University, 2312 Food Science Building, Ames, IA, 50011-1061, USA | 20 | 4 |
| 5 | Department of Engineering, Aarhus University, Gustav Wieds Vej 10, 8000, Aarhus C, Denmark | 19 | 5 |
| 6 | Department of Food Science, University of Arkansas, Fayetteville, AR, 72701, USA | 19 | 5 |
| 7 | Department of Food Science, University of Massachusetts-Amherst, 236 Chenoweth Laboratory, 01003, Amherst, MA, USA | 19 | 5 |
| 8 | Department of Food Science and Technology, University of | 18 | 6 |

| | | | |
|----------------|--|----|---|
| | Georgia, Athens, GA, 30602-7610, USA | | |
| 9 | Lipid Technology and Engineering, School of Food Science and Engineering, Henan University of Technology, Lianhua Road, Zhengzhou, 450001, Henan, People's Republic of China | 16 | 7 |
| 10 | State Key Laboratory of Food Science and Technology, School of Food Science and Technology, Jiangnan University, 1800 Lihu Road, Wuxi, 214122, Jiangsu, People's Republic of China | 16 | 7 |
| Truncated..... | | | |

It can be observed from Table No. 5.6 that, there were 1068 organizations involved in research activity. The organizations that have contributed in the publication during 2010-2014. Department of Food Science and Human Nutrition, University of Illinois, 1302 W. Pennsylvania Avenue, Urbana, IL, 61801, USA, 61 publication by one institutions, Halal Products Research Institute, Universiti Putra Malaysia, Selangor, Malaysia the list with 22 publication followed by one institutions. one institutions with 21 publications, One institutions with 20 publications, 3 institutions with 19 publications, 1 institutions with 18 publications, 2 institutions with 16 publications, 1 institution with 15 Publication, 11 institution with 10 Publication, 17 institution with 9 Publication, 4 institution with 14 Publication, 2 institution with 13 publication, 6 institution with 12 publication, 7 institution with 11 publication, 7 institution with 10 publication, 10 institution with

9 publication, 13 institution with 8 publication, 21 institution with 7 publication, 47 institution with 6 publication, 48 institution with 5 publication, 134 institution with 4 publication, 352 institution with 3 publication, 410 institution with 2 publication, etc. and 168 institutions with Single publication. Therefore the hypothesis “Majority of the affiliated institution are from USA (Hypothesis No.3) is valid”.

5.7 DISTRIBUTION OF LITERATURE IN VARIOUS CHANNELS OF COMMUNICATION

Channel, in communications, refers to the medium used to convey information from a sender (or transmitter) to a receiver. Researchers communicated their publication through variety of communication channels.

Table 5.7: Distribution of literature in various Channels of Communication

| Channels of Communication | No. of Publication | Percentage |
|---------------------------|--------------------|---------------|
| Original Paper | 1007 | 94.29 |
| Letter To The Editor | 32 | 3.00 |
| Review | 14 | 1.31 |
| Erratum | 8 | 0.75 |
| Original Article | 4 | 0.37 |
| Review Article | 1 | 0.09 |
| Reaction Note | 1 | 0.09 |
| Editor's Response | 1 | 0.09 |
| Total | 1068 | 100.00 |

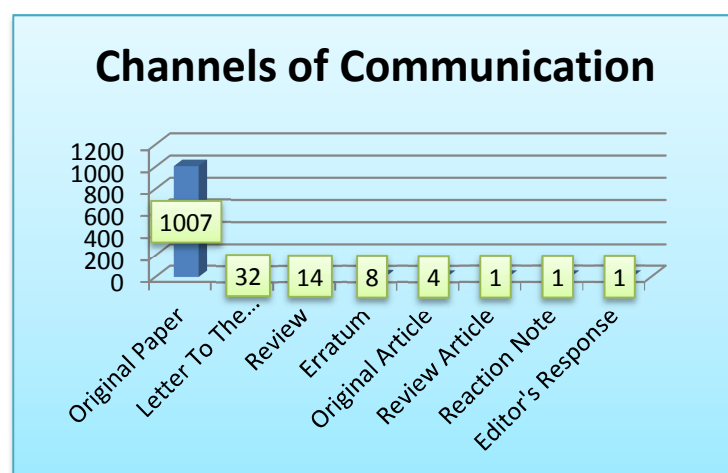


Figure No: 5.7 Distribution of literature in various Channels of Communication

It can be observed from table no. 5.7 and Figure No.5.7 that, Original Paper 1007(94.29%) of the Literature was published in Research paper followed by Letter To The Editor 32(3.00%), Review 14(1.31%), Erratum 8(0.75%), Original Article 4(0.37%), Review Article, Reaction Note, Editor's Response(0.09%). The total content of Journal Of “The American Oil Chemist’s Society” that is steps recovery, Original Paper, Letter To The Editor, review, erratum, Original Article etc. is analyzed.

5.8 DISTRIBUTION OF KEYWORDS

“A word occurring natural language text of documents or its surrogate that is considered significant for indexing and information retrieval”.⁽²⁾

Keywords are the words that are used to reveal the internal structure of an author's reasoning. Keywords are one of the best scientometric indicators to understand the grasp instantaneously

the thought content of the articles and to find out the growth of the subject field. By analyzing the keywords appeared either on the title or article will help in knowing in which direction the knowledge grows.

“Keyword is a word that succinctly and accurately describes the subject discussed in a document”.⁽⁶⁾

Table No.5.8: Keywords

| Sr. No | Keywords | Frequency | Percentage (%) | Rank |
|----------------|----------------------|-----------|----------------|------|
| 1 | Biodiesel | 68 | 1.15 | 1 |
| 2 | Fatty acids | 66 | 1.12 | 2 |
| 3 | Oxidative stability | 47 | 0.80 | 3 |
| 4 | Soybean oil | 40 | 0.68 | 4 |
| 5 | Tocopherols | 40 | 0.68 | 4 |
| 6 | Lipase | 34 | 0.58 | 5 |
| 7 | Olive oil | 31 | 0.52 | 6 |
| 8 | Phosphonates | 29 | 0.49 | 7 |
| 9 | Triacylglycerols | 28 | 0.47 | 8 |
| 10 | Antioxidant activity | 26 | 0.44 | 9 |
| Truncated..... | | | | |

It can be observed from Table No. 5.7 that, the high frequency keywords were Biodiesel (68), Fatty acids(66) and Oxidative stability(47)Table gives a list of keywords appeared in the articles.

6. CONCLUSION:

JAACS, an AOCS journal, publishes original research articles, invited reviews, and letters to the editor that add significantly to the body of knowledge concerning the science and technology of fats, oils, oilseed proteins, and related materials. Included are reports of

advances, innovations or important new information pertaining to analysis, properties, processing, products, and applications of these food and industrial resources. Breakthroughs in food science and technology, biotechnology (including biocatalysis and bioprocessing), and industrial products and applications are particularly appropriate.

The Collaboration rates of articles published per year were 0.97. The highest numbers of Articles (234) were produced in 2012 and follower that 2011 respectively. There were as many as 74 countries carrying out research and produced 1068 articles. USA is the top producing country with 927 publications (21.15) of the total output. Authorship trend is towards multiple-authored papers. Single authored papers accounted for 2.81 percent. Out of 1068 articles, 168 articles (15.73%) are written in collaboration with International Institutions. The collaboration is observed with two countries and three countries. The most productive authors are Tong Wang (USA) who had the highest number (22) of the publication. There were 1068 organizations involved in research activity. The organizations that have contributed in the publication during 2010-2014, Department of Food Science and Human Nutrition, University of Illinois, 1302 W. Pennsylvania Avenue, Urbana, IL, 61801, USA, 61 publication by one institutions, Researchers communicated their publication through variety of communication channels, the highest communication channels 1007(94.29%) of the

Literature was published in Letter To The Editor. Keywords are one of the best scientometric indicators to understand the grasp instantaneously the thought content of the articles and to find out the growth of the subject field. By analyzing the keywords appeared either on the title or article will help in knowing in which direction the knowledge grows .The high frequency keywords were Biodiesel(68), Fatty acids(66) and Oxidative stability(47)Table gives a list of keywords appeared in the articles.

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