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## SCIENCE COMMUNICATION THROUGH NEWSPAPERS ( A COMPARITIVE STUDY)

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### **Abstract**

For the creation of scientific temper among countrymen and creating a rational world media plays a crucial and important role. To enable citizens developmental approach media has to start playing more active role. Media is a connector between scientist and public for disseminating scientific information and establishing understanding. Also editorial page of a newspaper helps in building an opinion and gives in depth insight about the issue. Considering this role important researcher focuses to identify the area provided to Science and Technology content on editorial page of selected newspapers along with the formats of news presentation used more by the newspapers. To accomplish this quantitative evaluation of the content has been done. For analyzing this, content analysis method has been used. Information related to Science and technology published on editorial page in the selected newspapers i.e. The Tribune, Punjab Kesari and Ajit was considered under the study. The study was done for the period of 2 months which is from 1<sup>st</sup> June, 2019 to 31<sup>st</sup> July, 2019. The outcome exposes that less coverage is given to science content on the editorial page in the newspaper. English dailies are comparatively provide comparatively more space to science content and all three newspapers deliver science content in the form of news package.

### **Introduction**

Imagining life's existence without science is difficult. Our maximum daily activities are reliant on either science or gadgets/equipment developed from science. It is almost impossible to imagine life without science. Life itself is a science so, idea of life without science is sufficient to understand how it has got mixed into our day-to-day life. Life of a housewife without cooktop, blender, student's life without laptop, mobile phone sounds strange but that is the fact. It is science only which can help in changing people's temper and change our irrational society.

Science and technology had been at the front of the development of physical tools and techniques of mass communication. Similarly media and communication is also dependent on technology. Those were the days when paper and pen were the tools of journalism. Media these days too is totally working on equipment, instruments and gadgets developed with the help of science. Newsrooms are now filled with computers and software. Notepads and pens are replaced with computers and mobile phones, designing and printing is just a click away. Science and technology in many ways has changed the operations of media. But when it comes to science journalism, it looks least in these newspapers. Importance of gadgets, equipment is understood by newspapers but reporting about science and technology does not seem important for them. On one hand where science helps in our day to day chores, science on the other hand helps people to understand and become logical in life. Science can do wonder when it comes to educate people. Science can bring people out of all superstitions and can enlighten people with knowledge at large. Science had been captivating and is a thirst to learn maximum and unknown. Presence of science can be felt everywhere and lazy approach towards it, is something which unfortunately hinders penetration of related information among people. Communication is one of the reasons be it interpersonal communication or mass communication that leads people from getting less aware and informed. But media can act as a bridge to fill this gap to eradicate dilemma. Filling this gap and generating scientific temper among masses has now become need of the hour. An up-to-date farmer can secure his fields from dangerous chemicals. It has something to contribute for every single field be it agriculture, medical or telecommunication. Discourse of logics and facts required for developing scientific temper helps in reducing superstitions. Science contributes in informing society and informed civilization can protect the resources with right vision and remedial actions. Media has a significant part in the development of public and it's now high time that media should understand why it is important to educate people so that scientific temper can be developed among masses. Scientific illiteracy and unformed citizen will move towards delusions and the illogical thought process which may obstruct the endeavors of progress.

### **Objectives of the study**

1. To identify coverage of science and technology stories on editorial page.
2. To evaluate the news presentation formats used for reporting science content by English, Punjabi and Hindi newspapers in India.

### **Research Methodology**

#### **Content analysis (comparative study)**

The objective of this research was to look out the coverage of science and technology in newspapers especially on editorial page. To accomplish this quantitative evaluation of the content has been done. For analyzing this content analysis method has been used. Content analysis is one of the methods used in research to study the content under consideration in a systematic way. Information related to Science and technology published on editorial page in the selected newspapers was considered under the study. Various variables like space given to science content, formats of information presentation in newspapers were coded. The whole in print area for information on editorial page was calculated by excluding space given to advertisement and letters to editor from the total space of editorial

page. The content was further categorized in formats of news writing and space was calculated.

Measurement of the content was further followed by comparative analysis.

Unit used for measuring Space was Column c.m. Editorials/articles/features published related to science and technology beat were counted, later the measurement was done using column c.m as a unit of measurement for space. Headlines and photographs are an integral part of news story and hold readers attention, hence keeping this into consideration headlines and photographs were not excluded from the measurement whereas the space provided to letters to editor has been excluded.

Newspapers selected for study are The Tribune, Punjab Kesari and Ajit

This study is limited to North region i.e. major states in the region Punjab, Haryana, Himachal Pradesh, Delhi and Jammu & Kashmir. Hindi and Punjabi are the popular languages of this area. Therefore one newspaper in English and one each in Hindi and Punjabi are considered for this study. The region is mainly served by the newspapers selected for study. The Tribune is a daily newspaper published in English language from Chandigarh whereas Punjab Kesari is Hindi daily and has headquarters in Jalandhar and Delhi. Third newspaper i.e. Ajit is a Punjabi newspaper and is published from Jalandhar.

#### **Time Period**

2 months period has been selected for the study i.e. from 1st June, 2019 to 31st July, 2019.

#### **Review of Literature**

Post-independence witnessed great progress and growth in the field of science. But same growth and progress was not seen in peoples' understanding about science and technology. Even after the growth of mass media tools like TV, newspapers and internet logical and scientific temperament was not established.

Marigold Linton through his book "*A Simplified Style Manual: For the preparation of Journal Articles in Psychology, Social Sciences, Education & Literature (1972)*" has described the significance of reporting issues covered under Science and technology beat. He explains that science and technology reporting should be done in a striking way to make people the content. He also articulates that along with science reporting its writing style has to be focused too. Reporting scientific information in simplest way is as important as science reporting. Through his writing he emphasizes on using simple and understandable language, words and tense. Science reporting is a failure if its understanding is not established.

According to J.V. Vilanilam in his book "*Science Communication and Development (1993)*" science has worldwide acceptance and importance. He has explained how the growth and development of any country is dependent on proper science communication. It educates the society and leads them towards awareness. Vilanilam has emphasized that science communication in India has to be done for every layer of the society. Every society literate or illiterate, rich or poor, farmers or scientists each and everyone should be covered under the circumference of science communication.

In the book "*Journalism, Science and Society: Science communication between news and public relations*" which is edited by Martin W. Bauer, Massimiano Bucchi rise and fall of science communication has been explained. They have also explained about the changing contexts of communicating science.

David J. Bennett, Richard C. Jennings in their book “*Successful science communication: Telling it like it is*” emphasis on bringing together experienced and successful science communicators. Scientists, academicians and media has to come together for establishing the better understanding of science among people.

The book named Science meets communication edited by Manoj k. Patairiya and AnkuranDuttaincludesvarious research papers on Science communication. Stating the importance of media in communicating science the book emphasis onvarious methods. Also they state that science content has to be disseminated properly to create Scientific temperament.

In his research paper “*Comparison of science coverage in hindi and english newspapers of India: a content analysis approach*” Dr. (Mrs) Meenu Kumar revealed the state of science communication ion in India. The results of research paper is an alarm for print media and seeks its more attention towards science communication. As the result states that very less space is given to science related content in the newspaper.

“*The Sciences of Science Communication*” is an article written by Baruch Fischhoff in which he has defined importance of science communicationforthe society. He says that science has many advantages to mankind. It makes peoplelogical, help them adopt rational approach, to make people live and survive in scientific environment and help them to compete with the world science communication plays a vital role. His book focuses on making people more logical through science communication which can later help them in making decisions.

#### **Data tabulation and Interpretation**

<b>Content(News)</b>	<b>Area(in cm<sup>2</sup>)</b>	<b>%age</b>
Other beats	49852	97.46%
Scienceand Tech. Content	1298	2.5%
<b>Total</b>	<b>51150</b>	<b>100%</b>

Table 1: Science content on Editorial page of The Tribune

The area and percentage of Science and technology content on Editorial page of The Tribune newspaper isgiven in the above table. Table no 1 shows that out of 51150 cm<sup>2</sup> area of editorial page ; only 1298cm<sup>2</sup> space was given to science content. This comes to 2.5% of the total printed area.

Content(News)	Area(in cm <sup>2</sup> )	%age
Other beats	51370	98.64%
Science and Tech. Content	710	1.36%
<b>Total</b>	<b>52080</b>	<b>100%</b>

Table 3: Science content on Editorial page of Punjab Kesari

The area and percentage of Science and technology content on Editorial page of Punjab Kesari Newspaper. It shows that out of 52080 cm<sup>2</sup> area of editorial page for editorials and articles; only 710 cm<sup>2</sup> space was given to science content. This comprise to only 1.36% of the total printed area

Content(News)	Area(in cm <sup>2</sup> )	%age
Other beats	48700	98.19%
Science and Tech. Content	900	1.81%
<b>Total</b>	<b>49600</b>	<b>100%</b>

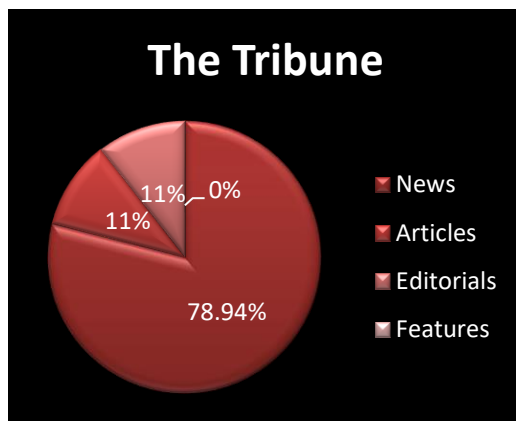
Table 3: Science content on Editorial page of Ajit

The area and percentage of Science and technology content on Editorial page of Ajit newspaper is given in the above table. The data in table 3 shows that out of 49600 cm<sup>2</sup> area of editorial page ; only 900 cm<sup>2</sup> was given to science content which is nearly 2.1% of the total printed space.

#### **Formats of scientific information published in English, Hindi and Punjabi newspapers**

Format Type	Space(in cm <sup>2</sup> )	Percentage
News	15	78.94%
Articles	02	11%
Editorial	02	11%
Features	00	00%
<b>Total</b>	<b>19</b>	<b>100%</b>

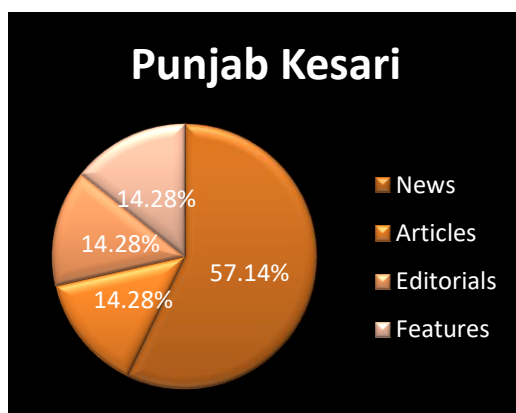
Table 4: Space given to various formats of news writing in The Tribune



Pie Chart 4: Preference of formats use by The Tribune newspaper in %  
 The Table No 4 reveals that out of 19 news published about science and technology, 15 were in the form of news and rest 2, 2 were published in the form of articles and editorials respectively. It can be seen in pie chart 4that English newspaper has used various formats like news packages, articles, editorials and features of news writing to present science content. Out of these formats news package is used more with the percentage of 78.94 followed by articles and editorials equally with the percentage of 11 each. No scientific content was published in the format of feature and features equally with the percentage of 28.57 each. No scientific content was published in the form of editorials

Format Type	Space(in cm <sup>2</sup> )	Percentage
News	08	57.14%
Articles	02	14.28%
Editorial	02	14.28%
Features	02	14.28%
<b>Total</b>	<b>14</b>	<b>100%</b>

Table 5: Space given to various formats of news writing in Punjab kesari

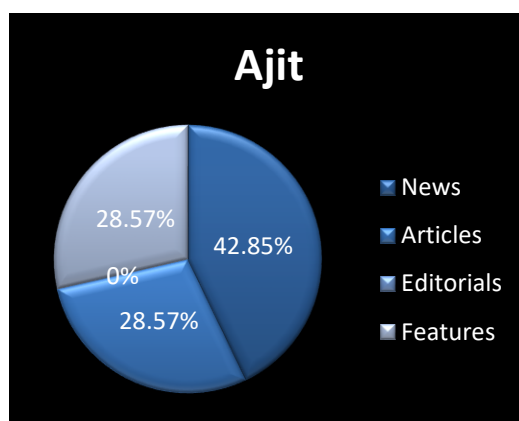


Pie Chart 5: Preference of formats use by Punjab Kesari newspaper in %

The Table No 5 shows that total 14 stories were published out of which 8 were news , rest articles, features and editorials shared same number that is 2. Pie chart5 shows that science and technology material was published in various formats. Science content is published more in the form of news package with the percentage of 57.14 followed by articles, features and editorials equally with the percentage of 14.28 each. This is to note that only Hindi newspaper published science and technology content in almost every possible form.

Type of format	Space(in cm <sup>2</sup> )	Percentage
News	03	42.85%
Articles	02	28.57%
Editorial	00	28.57%
Features	02	00%
<b>Total</b>	<b>07</b>	<b>100%</b>

Table 6: Space given to various formats of news writing in Ajit



Pie Chart 6: Preference of formats of news writing by Ajit newspaper in %  
 The Table No 6 reveals that out of 07 stories published about science and technology, 03 were in the form of news and rest 2 articles and 2 features were published. Table also shows that no editorial was published related to science and technology. Pie chart 6 reveals that science content is published more in the form of newspaper package with the percentage of 42.85 followed by articles.

**Conclusion**

India is viewed as a country of superstitions and false beliefs. The diversity of India in region, religion gives birth to various custom, thought process and many times due to such reasons all hard work done for the growth and developments mostly goes to waste. Also the wrong beliefs stop citizens to contribute in the development process. The lack of knowledge and ability to think rationally makes them believe anything and everything. But this can be resolved if media start focusing and giving more attention towards communication scientific temperament in simplest

way to the country men. Rather newspaper puts less efforts in simplifying the science content for readers. As compared to other beats like crime, politics and entertainment less focus on analysis of science news is given whereas political news are explained very well with all its aspects. The same can be seen in the results. Topics under science and technology beats are either not covered or if covered are not explained well. Not only the total coverage of science and technology content is less but very few subjects of this category are touched.

Editorial page is considered as view point or opinion of newspaper and holds importance for readers. Although each page of the newspaper has its own importance but content of editorial page is relied more. To give an insight and in depth knowledge about any issue editorial pages are focused more. But it seems like science content is not as important as other topics are. Editorial page is opinion maker page. This page provides its readers with the detailed content. It answers all why and how. This page tells how an event, issue should be seen. Two months study reveals that English newspaper published 2 editorials and 2 articles, Punjabi newspaper published zero editorial, 02 articles and 2 features and Hindi newspaper published 02 articles, 02 editorials and 02 features related to the subjects categorized under science and technology. So collectively English newspaper gave 2.5% space to science content on editorial page, Punjabi newspaper gave 1.81% and Hindi newspaper contributed 1.36% space. Since Punjab is an agricultural state Punjabi newspapers are expected to deliver more content but results are surprisingly different. In contrast to English newspapers coverage of science content in Punjabi newspaper is less.

The results from the study also helped to chalk out various formats used frequently to publish information related to science and technology. According to the results, all selected newspapers under study used news package more to publish science content and after that other largely used formats are articles. Newspapers are considered as a source of detailed information. The result says that format to writing information in news package is preferred more in English newspapers as 78.94% of science content was published in the form of news package in The Tribune. On the other hand preference varied in Hindi and Punjabi newspapers. Hindi newspaper 57.14% of science and technology content to be published in news package followed by articles, features and editorials equally with the percentage of 14.28 each. In case of Punjabi newspaper 42.85% of published information was in form of news package.

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