

THE RELEVANCE AND IMPACT OF PAPER'S TITLE, ABSTRACT AND KEY WORDS FOR CITATIONS AND DATA BASES

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Abstract. The number of citations is used to measure the impact of a scientific paper, of a magazine, but also of a researcher. Most scientific articles do not have citations, and the number of visits is dependent on very many variables. In the online environment, given the abundance of information, the research is made using certain key words. The purpose of the article is to examine how the title, the abstract and the key words of an article can influence its visibility and the number of citations.

Keywords: *relevance, title, abstract, keywords, citation, data bases*

1. INTRODUCTION

All magazines are interested in publishing articles with a high potential impact, which could attract citations, and therefore increase the visibility and prestige of the publication. Thus, the correct identification of the elements of an article that might attract citations is interesting both for the authors and for the editors of journals. In this context, we propose to examine the importance and impact of the title, abstract and keywords on the number of citations and visits of the databases.

The authors usually give most of the time to presenting the methods and the results of their research and give very little time to formulate the title, the abstract and the keywords of an article. However, these elements can ensure the success of the publication.

Given the specificity of the scientific publications in the online environment, it is necessary to take into account an optimization of the elements of an article to increase its chances of being found and read by the target public.

In the online environment the search has a number of peculiarities and the elements of an article that influence its chances to be read / quoted. In the era of printed publications the title of an article was less important because it was published in a certain context. An article that approached the issue economically was first published in an economic journal. Currently, the search using the word "incubator" will return through the search engines results in the industrial field.

2. FROM THE SEARCH TO THE CITATION OF AN ARTICLE

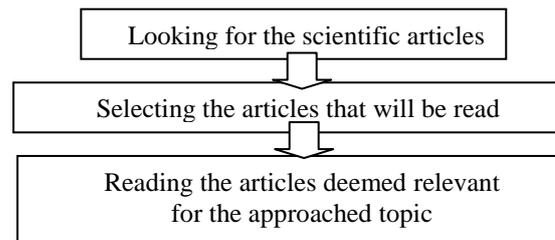
Laurence (2001) was the first who published data a clearly showing that the online publication increases the impact of the scientific papers [1]. His study was later confirmed by

other studies [2]. The online access of a paper is made most often by searching using key words.

From the statistics published by databases (for ex. REPEC) we can see a big difference between the number of views of the abstract and the number of downloads of the paper. This aspect clearly shows that, if after the reading of the abstract, the paper is not deemed interesting, it is no longer read.

The title, the abstract and the key words enable the interested persons to look and select the articles that will be read in the first phase and quoted subsequently.

In this process, we distinguish three distinct phases:



Source: prepared by the authors
Figure 1. Search-reading-citation

Searching for scientific articles

The normal question that arises is "How does an article become read?". We distinguish three main ways:

- Directly from the magazine that publishes the article, in the printed version or in the online version. An increasing number of magazines appear only in the online version for reasons concerning the costs implied by the printing. In our opinion the number of direct visits is small because it is conditioned by the fame of the magazine.
- By searching using the search engines. This method is time-consuming because the search engine shows the pages containing the searched words, whether they are scientific pages, press articles, blogs, etc. In this type of search, the title plays an essential role because the search engines deem the title as relevant for the content of the article.
- By searching in the scientific databases. The advantage is that the search is only in scientific papers and consequently, the results of the search are highly relevant.

The search is made using either the key words that are relevant for the topic of interest, or using the title of the

article if it is known. The citation of an article can contribute to the increase of its visibility because other researchers will be interested in its content.

On the internet there are a lot of more or less elaborate guides about how an article should be used in order to provide its success and to attract citations.

The papers can be classified in many categories as can be seen in box 1.

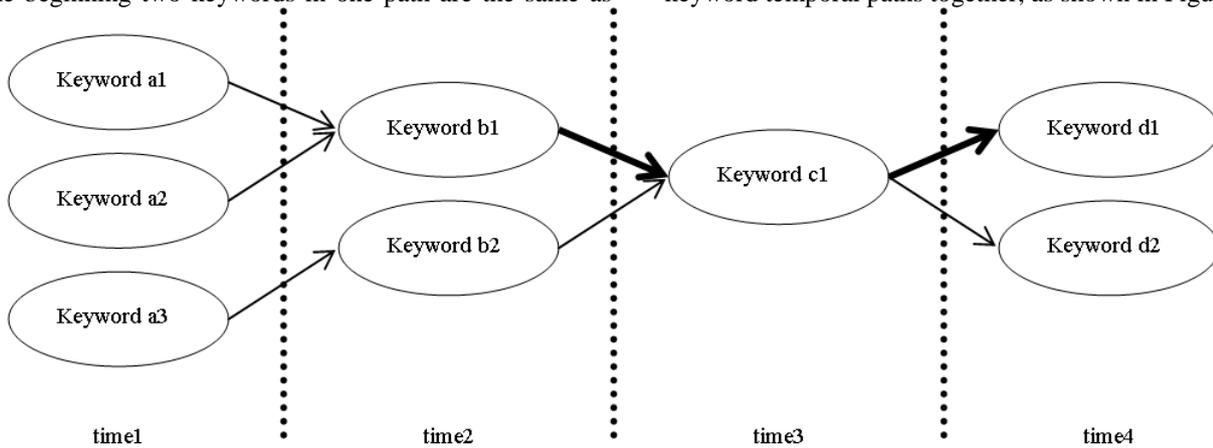
<ul style="list-style-type: none"> • Academy News • Acknowledgements • Addendum • Advertisements • Author Index • Book Reviews • Cartoon • Commentary • Correspondence • Corrigendum • Editor's note • Editorial • Erratum • From the archives • General Articles • Generalia • Guest Editorial • Historical Notes • Hypothesis • In Conversation • In this Issue • Institutional Members • Keyword Index 	<ul style="list-style-type: none"> • Letters to the Editor • Living Legends in Indian Science • Meeting Reports • News • News Focus • Occasional Poems • Opinion • Pedagogical Notes • Personal News • Preface • Prof. C. N. R. Rao • Publications received • Random selections • Reports and Documents • Research Accounts • Research Articles • Research Communications • Research News • Research Snippets • Retraction • Review Articles • Reviews • Science Notes and News 	<ul style="list-style-type: none"> • Scientific Correspondence • Short Communications • Short Scientific Notes • Special Section: Atmospheric And Oceanic Sciences • Special Section: Clinical Neuroscience • Special Section: Earth Sciences • Special Section: Materials • Special Section: Megha-Tropiques • Special Section: Microscopy in Biology • Special Section: Radar Imaging Satellite-1 • Special Section: Science of the Himalaya • Special Section: Tuberculosis • Supplementary Notes • Technical Comments • Technical Notes
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Source: <http://www.currentscience.ac.in/php/features.php>

Box 1. Types of papers

Li and Sun (2013) studied the application of weighted co-occurring keywords time gram in academic research [3]. The cited authors started “with identifying all paths with up to three keywords. Then any two different paths are examined. If the beginning two keywords in one path are the same as

the last two keywords in the other path and the time value of the first path is later than that of the second path, we combine the two paths to one”. Li and Sun (2013) constructed keyword temporal network by combining many keyword temporal paths together, as shown in Figure 2.



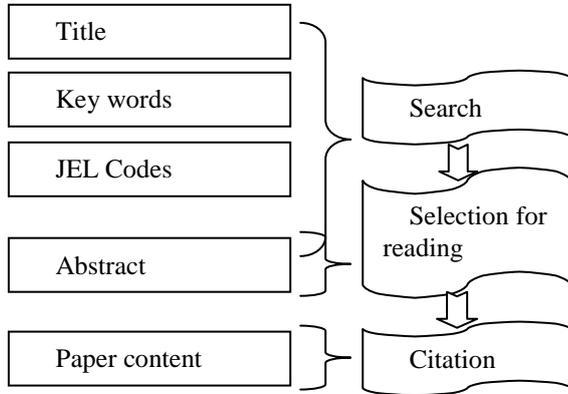
Source: Li, S., & Sun, Y. 2012

Figure 2. Keyword temporal network composed of different keyword timing paths

Selection of the articles that will be read

Researchers will select the articles based on their relevance for the topic in which they are interested.

The citation is the recognition of a significant contribution of the author of the quoted paper for the researched field.



Source: prepared by the authors

Figure 3. The relevance of paper elements for citation

From the diagram above we can notice that the title, the key words, and the abstract are the most viewed parts of an article. Their quality and relevance for the reader will determine whether the article will be read or not. The title and the article should be drafted taking into account that it must determine the readers to open and read the whole article.

However, it must also take into account that the title and the abstract must be consistent with the topic discussed in the article, in order to avoid disappointing the readers.

3. THE RELEVANCE OF THE ELEMENTS OF AN ARTICLE FOR CITATION

Paper title

The title is certainly the first and the most widely read part of a paper. In the specialized literature there are studies that analyse the correlation between the length of the title and the number of citations [4].

The title can be longer or shorter, can describe the results obtained or the research method, and can sometimes be amusing.

The importance of the structural elements of a scientific paper for its visibility and for the number of citations was the object of vast studies [5], [6]. Other authors studied the link between the amusing titles and the abstracts of scientific papers, and the number of citations [7]. Their conclusion was that the amusing titles and abstracts get 33% less citations than normally. An explanation could be the association between the amusing title and a topic treated less seriously, thus affecting the credibility of the paper.

The articles that have shorter titles are accessed and quoted more often than those with longer titles [8].

The abstract

The abstract is positioned at the beginning of the paper, and briefly presents its content to its potential readers.

The abstract helps the reader decide whether he/she will also read the content of the article. This is the most important role because the author does not write the abstract in order to trick somebody into reading the article.

The abstract can contain certain key words or expressions very possibly used by the potential readers to search. They help researchers find the article. The search engines use the abstract to find the articles relevant for a certain search.

The fact that repetitions should be avoided must also be taken into account. Repetitions can create the impression that the abstract was written in order to “trick” the search engines, with serious consequences for the author’s image. The abstract obviously has the role of making the reader curious, but the principles of professional ethics should always be observed.

The role of the abstract is to summarise the text of the article. The abstract should broadly present the content of the article, its main points.

Table 1. Types of abstract

No.	Type of abstract	Description
1.	Critical abstract	Includes a critical statement about the validity of the study carried out. These abstracts are usually shorter than the other types, having 400-500 words. They are used less frequently.
2.	Descriptive abstract	Indicates the type of information presented in the scientific paper. It does not contain critical statements concerning the study and does not present the results and conclusions of the research. It may present the purpose of the research, the methods used and the scope of the research. They have a length of 100 words or even less.
3.	Informative abstract	It contains the information of a descriptive abstract, but it also presents the results and conclusions of the research, and possibly the author’s recommendations. These abstracts have a length of up to 300 words, being the most used.
4.	Highlighting abstract	It is written especially to draw the reader’s attention. It has no value if it is not accompanied by the article. It is less frequently used in the academic environment.

Source:

<http://libguides.usc.edu/content.php?pid=83009&sid=62116>

A too long abstract loses its role of summarising the article and the reader's interest shall be lower due to their lack of time.

A successful abstract should not contain background information whose disclosure may lead to an excessive length of the abstract. This information is dedicated to the content of the article. An abstract with an excessive length risks being less read because of the researchers' lack of time. The references to the specialized literature (including the footnotes) and the citations should be avoided in the abstract. They will be left for the content of the paper, especially the literature review part.

The elliptical phrases, the abbreviations or the jargon words can create confusion among the readers and should be avoided. The abstract should be self-contained. Consequently, the images, figures, tables or references to them should not be included in the abstract.

How do we select and draft the title, the abstract, and the key words?

Scientific journals have their own requirements for the title, the abstract and the key words. In order to increase the visibility of the published articles, magazines aim at the indexation in the international databases. In the indexation process they must also observe the specific requirements of these databases.

Table 2. Frequent requirements for paper elements in call for papers

Element	Frequent requirements
Title	The length, the inclusion in a particular topic
Abstract	Number of characters or words
Key words	Number, relevance for the article.

Source: prepared by the authors

The titles have the following features [9]:

- They identify the main issues addressed by the paper;
- The start with the topic of the paper;
- They are exact, unambiguous, specific and complete;
- They do not contain abbreviations;
- They attract readers.

The titles of the scientific papers can be classified according to several characteristics, as can be seen in the table 3.

Table 3. Title's main characteristics

Title characteristic	Type
Length	Short or long
Formulation	Descriptive, declarative or a question
Content	Describes the results or the method used

Source: prepared by the authors

The key words

Most readers tend to search not only for one key word, but for two or even more key words. The paper title should contain the most relevant words for the paper.

4. DISCUSSIONS

The title and the abstract are used to invite reviewers to review the paper. They decide whether they will review the article or not, just based on the title and the abstract. In certain databases, the search takes place exclusively using the names of the authors, the title of the work and the abstract, without the key words of the article. Consequently, the author must include in the title and in the abstract certain key words that could be used to search in databases.

The number of citations is not always directly proportional to the visibility of the article or its quality. Andrew Moore, chief editor at the Wiley Publishing House, shows that the author's fame is another factor that influences the number of citations [10]. A higher quality article and with a high number of visits, but with a less known author will receive a lower number of citations than another article written by a famous author in the field.

Another issue, related to the authors' fame, is copying the citations from other authors. Simkin and Roychowdhury (2003) show that a high number of citations were inserted without reading the quoted work [11]. In order to prove this, the quoted authors study the number of errors present in quoting a text, but nonexistent in the quoted text. Repeating a quoting error identically in a significant number of authors shows that they have taken the citation ones from the others, without studying the quoted work. According to the quoted authors only 20% of those who quote, actually read the work they refer to in their papers.

The assessment of the quality of a scientific paper based only on the number of citations has a number of limitations, especially:

- If an author writes in a very narrow research field. In this case, his paper will be accessed by the few researchers in his field.
- If the paper is published in another language than English. In this case, the number of visits depends on the number of speakers of the language in which the article is drafted.
- If the author publishes the results of his research in a printed book. The limited number of copies and their perishability make the number of readers be much lower than in the case of the online publications.

In our opinion, for the narrow research field, it is wrong to assess the quality of a scientific paper exclusively based on the number of citations.

An article that is in one or several of the above- mentioned situations, will have a smaller number of citations in spite of the fact that it is a good article.

5. CONCLUSIONS

The title, the abstract and the key words are free to anybody on the internet and, therefore, can have a significant contribution to the increase of the impact of a scientific paper. These three parts of a scientific paper are essential for its impact and citation hits. The author should "help" readers find his/her work and optimizing these essential parts of the paper can ensure success.

Optimization of title, abstract and key words for data bases and search engines has some limits. The title and the

abstract are written for human readers, and not for search engines.

Concepts such as E-book, E-library, E-author, E-citation, E-education and E-research are increasingly apparent

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