

# An Effective Scientific Study on Journal Publishing and its Implications

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## Abstract

The research article in any discipline which needs to be published in any journal should be in a very systematic way. It works on both quantity and quality concepts. An understanding of basic concepts and practices of different types of journal and Article processing charge is a must for any author before publishing the article. In this modern era there are various publishers that the authors can approach to publish their articles, thesis, reports, books etc. These publishers have several subject matter experts in various domains who review the submitted articles carefully before publishing the work of the author. Also, by increasing the awareness of ethical matters related to publishing articles in appropriate journal, so that authors are vigilant at the early stage of their work which reflects the high-quality work of the author.

**Keywords:** Journal, Publication, Ethics, Article Processing Charge [APC]

## Introduction

A journal is a scholarly technical/scientific publication containing articles written by researchers, professors and other experts. Journals focus on a specific domain or field of study. Unlike daily newspapers and magazines, journals are intended purely for an academic or technical audience, not general readers. Journals are published on a regular basis (monthly, quarterly, etc.) and are sequentially numbered in terms of journal index. Each copy is an **issue**; a set of issues makes a **volume** (each year is a separate volume). Like newspapers and magazines, journals are also called serials or periodicals.

Materials in any medium issued under the same title in a succession of discrete parts, usually numbered or dated and appearing at regular or irregular intervals with no predetermined conclusions is known as serial journals. Materials with its own distinctive title containing a mix of articles by more than one contributor issued at regular stated intervals of less than a year without prior decision as to when the final issue will appear is known as periodic journals. Periodic journals do not admit irregular spaced publication times.

In this paper we discuss about the various types of available of journals along with the terms of quality and quantity embedded with the professional ethics which need to be followed by all the authors. paper is twofold beneficiary as it discusses even about the article processing charges in various types of journals and publications.

## Types of Journals

There are various types of Journals

- i. Domain based journals: can be a periodical and nonperiodically publication in which scholars interested or belongs to a particular area of interest or field can publish their articles. The domain can vary from any materialistic science to social science.

- ii. University publications: The University Journals offers an alternative to the current journal ecosystem, linked to university repositories, University Journals publish reviewed articles, data and other academic works on an accredited open access platform. The university journals offer an alternative to the present journal system, which is linked to university repositories, the university journals platform is owned by the university community and offers open access journal publications to researchers attached to its respective university partners.
- iii. Individual publications: is individual or corporation responsible for the printing and distribution of digital or printed publications. Publishers also handle all the marketing collateral efforts for the publications and are not the creator of the material.
- iv. Regional publications: serves a region such as a city, or part of a large city A regular publication of the readership data will help publishers identify and fix problems if any.
- v. Society/Association publications: serves the needs of association publishers, communications professionals and the media they create. It leads innovative approaches in community building, focuses on emerging markets, both geographically and discipline based, hosts the recognition of industry and individual best practices also retains essential connection to publishing
- vi. Academic Journal: is a periodical publication in which scholarship relating to a particular academic discipline is published. Academic journals serve as common transparent forums for the presentation, scrutiny, and discussion of research. They are usually peer-reviewed or refereed. Content typically takes in the form of articles presenting original research, review articles, book reviews etc. The purpose of an academic journal, is to give researchers a venue to "impart their knowledge to one another" and contribute what they can for improving the natural knowledge, and to improve the perfection in all Philosophical Arts, and Sciences." The term *academic journal* applies to scholarly publications in all disciplines.

### **Journals in terms of Quality vs Quantity**

An important question for young researchers, is it better to try to write more papers or to try to write fewer but better papers? In other words, what is more important: quantity or quality in research?

#### **Quantity**

There are various reasons why quantity is important:

- a) **Quantity shows that someone is productive and can have a consistent research output.** For example, if someone has published 5 papers each year during the last five years, it approximately shows what can be expected from that researcher in terms of productivity for each year. However, if a researcher has an irregular research output such as zero papers during a few years, it may raise questions about the reasons why that researcher did not write papers. Thus, writing more show to other people that you are more active.
- b) **Quantity is correlated with research impact.** Even though, writing more papers does not means that the papers are better, some studies have shown a strong correlation between the number of papers and the influence of researchers in their field. Some of reasons may be that
  - 1) Writing more papers improve your visibility in your field and your chances of being cited
  - 2) If you are more successful, you may obtain more resources such as grants and funding, which help you to write more papers
  - 3) Writing more may improve your writing skills and help you to write more and better papers.

- c) **Quantity is used to calculate various metrics to evaluate the performance of researchers.** In various countries and institutions, metrics are used to evaluate the research performance of researchers. These metrics include for example: the number of papers and the number of citations. Although metrics are imperfect, they are often used for evaluating researchers because they allow to quickly evaluate a researcher without reading each of his publications. Metrics such as the number of citations is also used on some website such as Google Scholar to rank articles.

## **Quality**

The quality of papers is important for several reasons:

- a) **Quality shows that you can do excellent research.** It is often very hard to publish in top level journals or conferences. For example, some conferences have an acceptance rate of 5 % or even less, which means that out of 1000 submitted papers, only 50 are accepted. If you can get some papers in top journals and conferences, it shows that you are among the best researchers in your field. On the contrary, if someone only publish papers in weak and unknown journals and conferences, it will raise doubts about the quality of the research, and about his ability at doing research. Publishing in some unknown conference/journals is something negative that may even decrease the value of a CV.
- b) **Quality is also correlated with research impact.** A paper that is published in a top conference or journal has more visibility and therefore has more chance of being cited by other researchers. On the contrary, papers published in small or unknown conferences have more chance of not being cited by other researchers.

Both quantity and quality are important. It is especially important to write several papers for young researchers to kickstart their career and fill their CV to apply for grants and obtain their diplomas. But having some quality papers is also necessary. Having a few good papers in top journals and conferences can be worth much more than having many papers in weak conferences. For example, in my field, having a paper in a conference like KDD or ICDM could be worth more than 5 or 10 papers in smaller conferences. But the danger of putting too much emphasis on quality is that the research output may become very low if the papers are not accepted. Thus, I believe that the best approach is to use a trade-off: (1) once in a while write some very high quality papers and try to get them published in top journals and conferences, (2) but sometimes write papers for easier journals and conference to increase the overall productivity, and get some papers published.

A researcher should be able to evaluate whether a given research project is suitable for a high-level conference/journal or not based on the merit of the research, and whether the research needs to be published very quickly (for most competitive topics). Thus, a researcher should decide for each paper whether it should be submitted to a high-level conference/journal or something easier.

But there should always be at least a minimum quality requirement for papers. Publishing bad papers or publishing very weak papers can have a negative influence on your CV and even look bad. Thus, even when considering quantity, one should ensure that a minimum quality requirement is met. For example, since my early days as researchers, I have set a minimum quality requirement that all my papers be at least published by a well-known publisher among ACM, IEEE, Springer, Elsevier, and be indexed in DBLP (an index for computer science). For me, this is the minimum quality requirement, but I will often aim at good or excellent conference/journal depending on the projects.

## **Economics of Journal Publishing**

Publishers are providers of value-added products and services. They perform crucial functions by manufacturing documents in numerous media, performing editorial and style work, selling the

material, and connecting readers to writers, so forth. All those functions involve costs. It is necessary to examine sources and types of revenue, different ways of raising revenue, and different business models, particularly in a world where digital publishing is becoming much more the norm.

As new technologies are emerging day by day; various new forms of delivery, new forms of access, and new types of services are being provided. That requires continuous ongoing stream of investment for things that once were thought of as one-time cost. To address a business model, particularly to start thinking about changing frameworks, need to think about who values the publications or the information delivery in the first place. The business models typically depend on how the information is accessed and what the information is about. The business models are related to what information is being published, for what type of audience, and how it is accessed. In a digital world we no longer need to have journal as a standard mode of obtaining and generating information. We can think about presenting information in lots of different ways and repackaging it and distributing it in different combinations.

There can be also charges for printing and usage of file, as opposed to merely viewing usage. Also, a group of people can be allowed to keep local electronic copies for rapid access and local archiving, or there could only be server copies. Governments in most countries are one of the main, if not the main, sources of funding to create the knowledge in the first place—to fund the research. Due to some exceptions, however, they have not been one of the main providers or direct disseminators of that information. Ultimately, at some level, governments are paying for it through subsidies to universities to pay for the libraries. But there is a question about whether the government should be directly intervening and providing access or providing the revenues necessary to do the publishing.

There is a huge value in the content, as well as in the value-added services that publishers, disseminators, aggregators, and distributors provide. There is thus a question about how different business models might succeed at supporting both aspects of the process, both content creation and distribution, getting incentives to generate the knowledge in the first place and getting reasonable incentives to provide high-quality publication, dissemination, indexing, and abstracting services.

### **Article Processing Charges**

Several journals charge fees to authors of one kind or another. Pre-publication fees, such as article submission fee or membership fee, are less common. Researchers are more possible to encounter post-publications fees, like writing process charge or page fee. Publication fee is paid by the author, the author's institution or from research funder. When trying to focus on the correct journal for publication of your manuscript, it's simple to get engulfed by the variety of not solely journals however additionally potential author fees.

Traditional journals are solely based on a reader-pays model, in which institutional libraries typically pay for access to content, and that open access journals, supporting “unrestricted access and unrestricted reuse” are always based on an author-pays model. In alternative words, as an author, you will need to pay money for submission to publication in a subscription-based journal and should not got to do thus for an open access one. This concept is made possible by alternative sources of revenue that cover the costs of the editorial, peer review, and publication processes, such as premium content, advertising, or subsidy by a journal's affiliated foundation or society.

Both traditional and open access publications that do entail so-called “author” charges, in this author may not have to pay APC fees in full because of discounts related to institutional membership programs, own society membership, or waivers of service (such as if in-house copy editing isn't needed). Moreover, you may not have to pay full or even discounted fees due to waivers based on either financial hardship or your country of origin's economic status or due to coverage by your establishment, department, or funder/grant; in reality, for open access publication, only 5% to 12% range of fees are ever paid using personal funds.

**Pre-acceptance fees**

**Submission fees.** Both subscription-based and open access journals may charge a fee at the time of manuscript submission to help to fund editorial and peer review administration. From an author's viewpoint, these fees may deter submission because of the existence of the many journals without such charges. However, submission fees therefore present the advantage of decreasing competition for review and acceptance, by enhancing publication speed. The effect on journal quality submissions increase, as only authors with confidence that they are choosing the right journal will be willing to pay a submission fee. Interestingly, it has conjointly been posited that submission fees will increase authors' concern regarding the standard of review and the reasoning behind manuscript rejection, by motivating larger responsibility.

**Membership fees:** Some open access journal is unique in charging a one-time membership fee (\$100-350) that covers the editorial process and peer review, as well as the possible publication, of one, two, or a limitless number of manuscripts per year (depending on the level of membership). Each author on a manuscript, up to more than two authors, must pay the fee and a must contribute to the community yearly, such as by participating in peer review. It is potential attainable to obtain membership once acceptance of a manuscript, however this will increase the price. Benefits of this membership approach include comparatively fast publication and rejection of repeatedly paying pre- and post-acceptance fees.

**Post-acceptance fees**

These fees either stand alone or are charged subsequent to a submission fee.

**Page/colour printing charges:** To cover the cost of printing, and particularly colour printing, certain traditional journals charge per page (often \$100-250 each) and/or per colour figure (about \$150-1,000 each). In rare cases, supplementary materials may additionally incur a flat charge or a charge per item or page, with fees typically starting from \$150-500.

**Publication fees:** These fees charged by several open access journals post-acceptance, are referred to as author publication charges or article process charges (APCs) and vary from \$8-3,900. APCs could also be driven down by submission fees, significantly among open access journals with high rejection rates. The post-acceptance charges by traditional journals, these APCs are more often flat fees because they primarily fund peer review and online dissemination, which are independent of length. In rare cases, post-acceptance, page/colour-independent fees may also be billed by traditional journals without unrestricted access and/or reuse provisions. Generally, these fees offer each retrospective and prospective coverage, as well as of referee management by the editorial employees or board (i.e., distinctive and following up with peer reviewers), manuscript preparation (e.g., copyediting), journal production (e.g., layout), open access on-line publication and hosting, classification (e.g., in PubMed), and archiving.

The "predatory" journals may take advantage of the APC-based model to receive payment in return for minimal peer review and processing, so authors got to make sure to appear for warning signs and think about checking whether or not to target journals listed by the Directory of Open Access Journals. A truly open access journal should also meet the two-fold requirement "unrestricted access and unrestricted reuse," meaning that an open access article must not only be freely accessible to all readers, also freely available for copying, distribution, and derivative work, as long as the author is acknowledged.

Regarding the value added by submitting to APC-charging journals, a weak correlation between citation-based impact and APCs has been found for open access journals, implying that higher fees are necessitated by higher rejection rates, higher fees are necessitated by higher rejection rates,

that successively imply larger selection and status. However, this analysis did not take submission fees into account.

Article acceptance is independent of APC. APC will not be refunded when articles are retracted as a result of author error or misconduct. Springer's average charge is € 10.2, around 44% of the journal in Springer between €750 -€1500. Majority of the Elsevier open access journals do not impose any APC. Elsevier article processing charge [APC] span from \$65 to \$5000.

In Elsevier:

- i. 60% of the journal do not charge
- ii. 10% of the journal charge from \$1 to \$1000
- iii. 20% of the journal charge from \$1000 to \$3000
- iv. 10% of the journal charge from \$3000 and above

### **Committee on Publication Ethics [COPE]**

COPE(**Committee on Publication Ethics**) was founded in 1997 to etiquette breaches of research and publication ethics. COPE is a voluntary body providing a discussion forum and advice for scientific editors, it aims to find practical ways of dealing with the issues, and to develop good practice. COPE is a non-profit organization dedicated to promoting integrity in research and its publication. COPE provides leadership on publication ethics and practical resources to educate and support editors and publishers. COPE organization serves as a trusted, professional voice in current debates about integrity in publishing ethics. Their aim is to influence all the stakeholders in scholarly publishing to make ethical standards an integral part of daily practice.

It is essential to attempt to define best practice in the ethics of scientific publishing. These guidelines should be useful for all the authors, editors, editorial board members, readers, owners of journals, and publishers. Intellectual honesty should be actively encouraged in all scientific courses of study and used to inform publication ethics and prevent misconduct.

The guidelines were developed from a preliminary initial version drafted by individual members of the committee, which was then submitted to extensive consultation. They address:

- i. Study design and ethical approval: Good research should be well justified, well planned, appropriately designed, and ethically approved. Conduction of research to a lower standard may constitute misconduct.
- ii. Data analysis: Data should be appropriately analysed, but inappropriate analysis does not necessarily amount to misconduct. Both fabrication and falsification of data do constitute misconduct.
- iii. Authorship: should balance intellectual contributions to the conception, design, analysis and writing of the study against the collection of data and other routine work. If there is no task that can reasonably be attributed to a individual, then that individual should not be credited with authorship.
- iv. Conflict of interest: comprise those which may not be fully apparent, and which may influence the judgment of author, reviewers, and editors. COPE have been described as those which, when revealed later, would make a reasonable reader feel misled or deceived. It may be personal, commercial, political, academic or financial. It may be in terms of employment, research funding, stock ownership, payment for work-based travel, consultancies and company support for staff.
- v. Peer review process: Peer reviewers are external experts chosen by editors to provide written opinions, with the aim of improving the study. Suggestions from authors as to who might act as reviewers are often useful, but there should be no obligation on editors to use those suggestion. Confidentiality must be maintained by expert reviewers in the assessment of a

manuscript and this extends to reviewers' colleagues who may be asked (with the editor's permission) to give opinions on specific sections. The submitted manuscript should not be retained copied. Reviewers and editors should not make any use of any data, arguments, or interpretations, unless they obtain the authors' permission.

- vi. Redundant publication: occurs when two or more papers, without full cross reference, share the same hypothesis, data, discussion points, or conclusions.
- vii. Plagiarism: ranges from the unreferenced use of others published and unpublished ideas, including research grant applications to submission under "new" authorship of a complete paper, sometimes in a different language. It may occur at any stage of planning, research, writing, or publication: it applies both for print and electronic versions.
- viii. Duties of Editors: Editors are the stewards of journals. They usually take over the journal from the previous editor(s) and always want to hand over the journal in good prospects. Most editors provide correct direction for the journal and build a strong management team. They must consider and balance the interests of many working groups of journals, including readers, authors, staff, owners, editorial board members, advertisers and the media.
- ix. Media Relations: research findings are of increasing interest to the print and broadcast media. Journalists can attend various scientific meetings at which preliminary research findings are presented, leading to the premature publication in the mass media.
- x. Advertising: Many scientific journals and meetings derive significant income from advertising.  
Reprints may also be lucrative.

## **Conclusion**

By providing a forum for Journal Publishing, APCs will enable various technical and scientific journal to serve the huge scientific community in terms of both quantity and quality by abiding all the professional ethics. This change will benefit and aid scientific research and hope all the authors will support this progress by submitting the next article to an appropriate journal.

## **Abbreviations**

APC = Article Processing Charge

COPE = Committee on Publication Ethics

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