

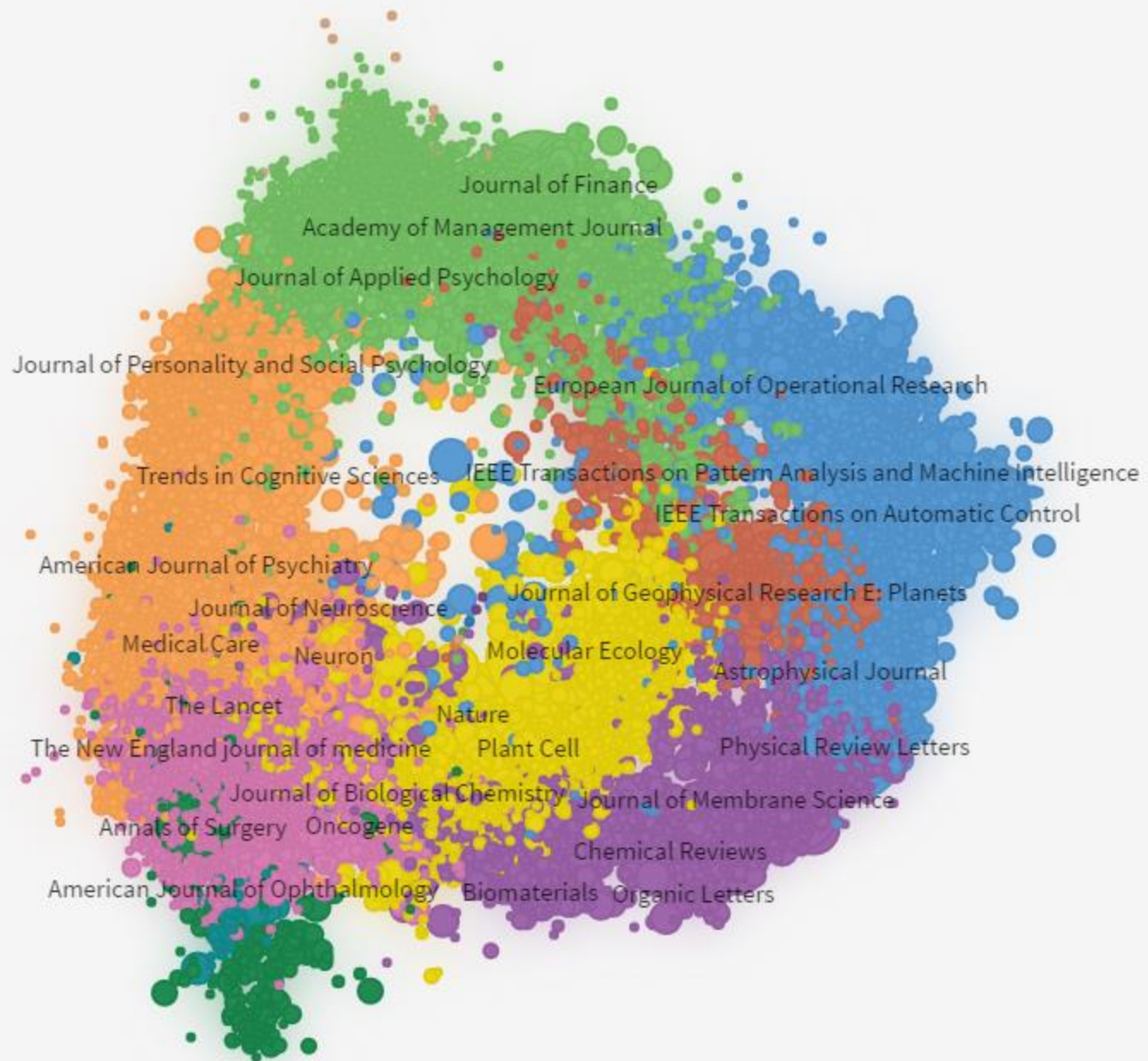
How to write a scientific article

Professor Dr. Son Radu

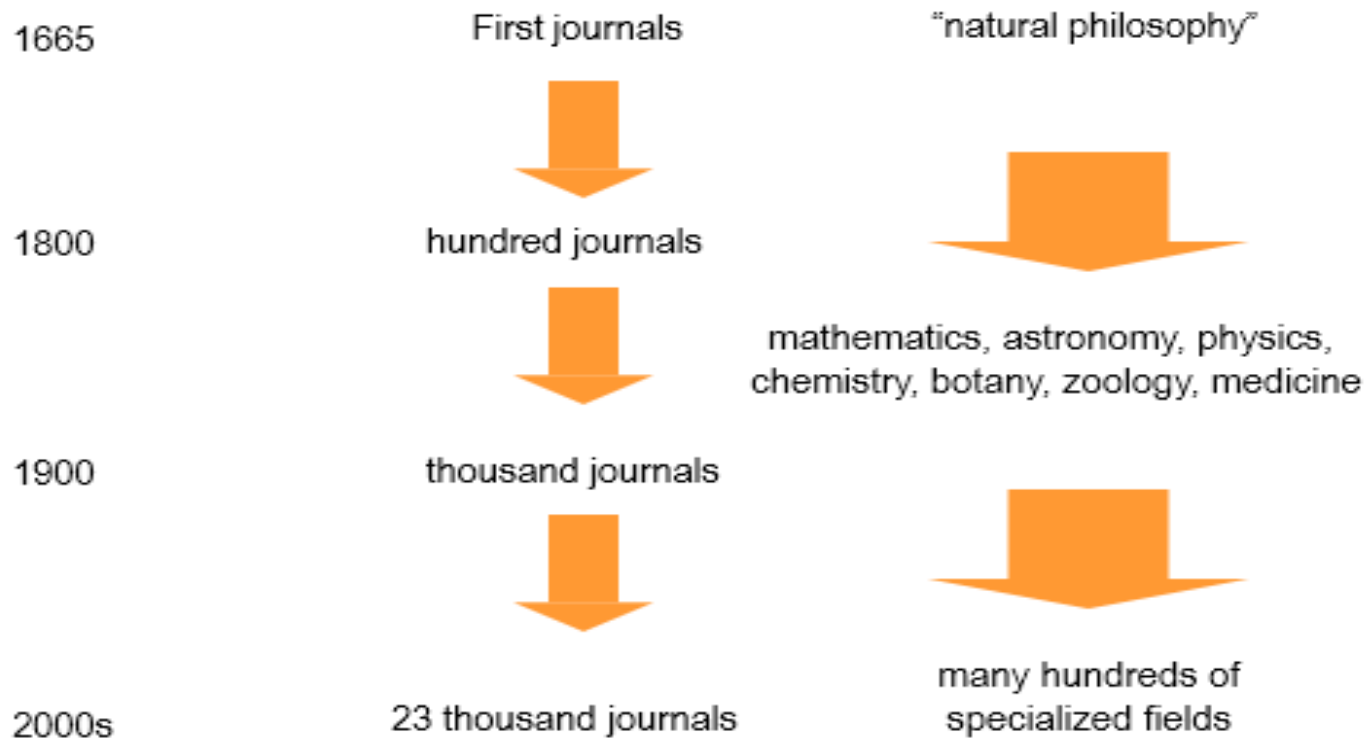


SHAPE OF SCIENCE

The Shape of Science is an information visualization project whose aim is to reveal the structure of science. Its interface has been designed to access the bibliometric indicators database of the SCImago Journal & Country Rank portal (based on 2014 data). The Shape of Science shows a very intuitive image of the interconnection of the different subject areas by the position of the journals. The individual profiles of the journals can be accessed from this interface



Journal Progress



Is one product truly different than the other?



Fights cavities,
Cleans teeth thoroughly,
Leaves your whole mouth
feeling clean



Get cavity protection for
your teeth to the roots. With
regular brushing, Crest
Cavity Protection toothpaste
will help fight cavities and
leave your breath feeling
refreshed.

VALUE INNOVATION

“Cirque du Soleil”

- Is it circus, opera, theater, ballet, or a Broadway show?



Accepting Research Papers for Publication

- ▶ National vs International Perceptions!
- ▶ Local, Regional, Global

Single author

Multiple authors

Single Institution author

Multiple institutions authors

Single country author

Multiple countries authors

International food research journal. 2012;19(3):1079

Simultaneous determination of heavy metals in drinking waters and wines by methods: ion pair-reversed phase high performance liquid chromatography and capillary zone electrophoresis

Pimrote; Pimrote

International food research journal. 2013;20(3):1373-1377

Effect of fermentation and processing on in vitro mineral estimation of selected fermented foods

Mohite BV, Chaudhari GA, Ingale HS, Mahajan VN

International food research journal. 2015;22(2):832

detection of butter adulteration

Nurrulhidayah

International food research journal. 2012;19(3):907-912

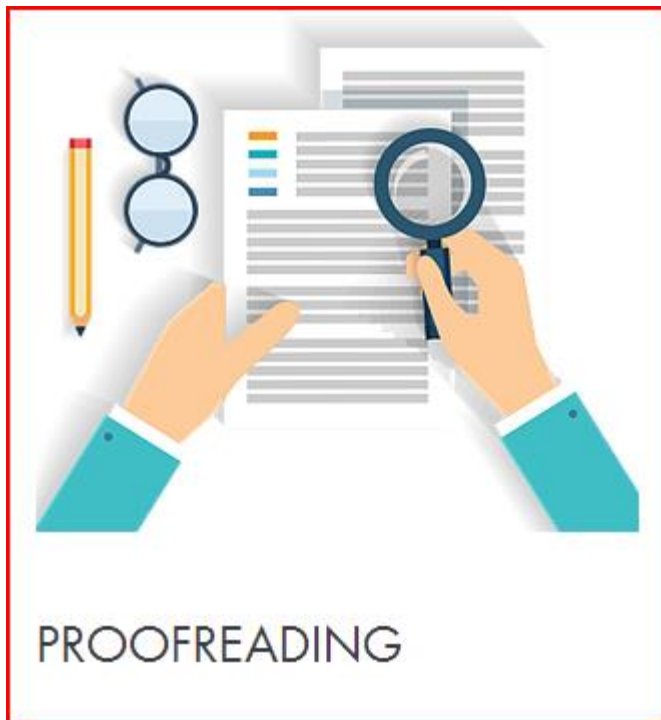
Study the properties of honey powder produced from spray drying and vacuum drying method

B. Nurhadi

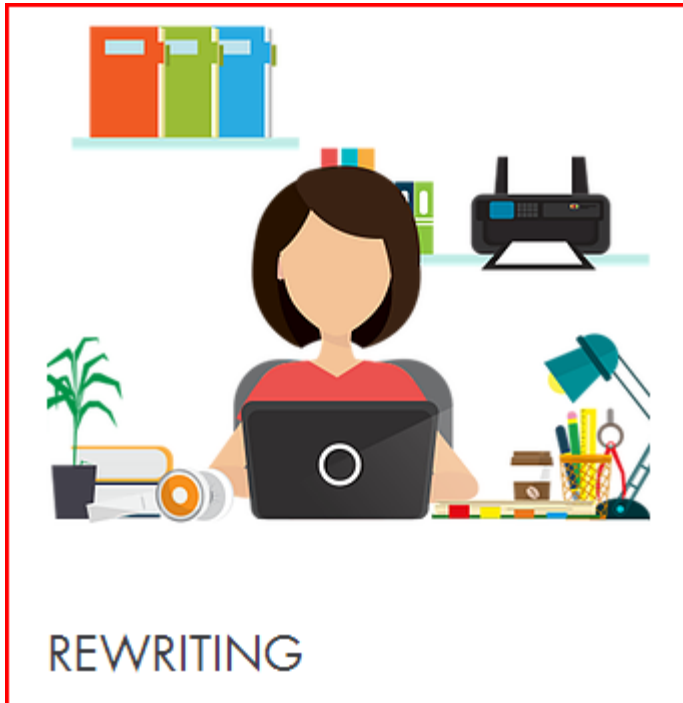
International food research journal. 2016;23(1):47-54

Effect of extraction methods on yield, oxidative value, phytosterols and antioxidant content of cocoa butter

M. M. Roiaini



- Correction of grammatical errors.
- Correction of punctuation errors.
- Correction of spelling mistakes.
- Correction of typographical errors.
- Stylistic changes – e.g. replacing basic words with more formal alternatives where appropriate.
- Comment boxes, for example, pointing out when a sentence lacks clarity.



- Complete rewrite of your documents while maintaining the same meaning.
- Making weak sentences stronger by re-writing or restructuring as necessary.
- Improving the style and flow of your written English throughout the paper.
- Ensuring that the paper is plagiarism free.



EDITING FOR ACADEMIC JOURNAL

- Include both proofread and rewriting where appropriate.
- Suggestions for change and querying of unclear elements where relevant.
- Ensuring that the paper is formatted to the academic style.
- Ensuring that references are correctly presented both within and at the end of the text.
- Ensuring that all figures and tables are appropriately labelled and referred to.
- Ensuring that the paper is plagiarism-free.

Unfortunately, the search for perfection – the perfect words in the perfect order to achieve the perfect form of expression – is often to blame for writers' block, and the more formal, polished and important the writing you must do is, the more difficult it is to let ideas flow in written text. Certainly the writing you do to report and publish your research is important and, as serious scholarship, it should obviously be formal and polished, yet there is no need to freight yourself with the burdens of importance, formality and perfection as you tackle each and every word, sentence and paragraph, and this is especially the case as you begin. Writing spontaneously and rather informally as you first draft a paper or chapter can be incredibly liberating and constructive.



INTRODUCTION

- ❖ The task of writing a research article can be daunting. You may have completed groundbreaking research, but unless the article is correctly written, at best publication will be delayed and at worst will never be published.
- ❖ The purpose of this lecture is to try and give an overview of how to write a well-structured research article for publication. It is principally aimed at new authors and is generic enough to encompass all disciplines.

Do I need to write a research article?

- This might seem like an obvious question, but it is one worth asking yourself. Editors and reviewers are looking for original and innovative research that will add to the field of study.
- Ensure that you have enough numbers to justify sound statistical conclusions. If the research you are going to report relates to a larger study, perhaps it is better to produce one important research article, rather than a number of average incremental articles.
- In deciding where to send your article, consider the reader. Does your article address a question of international or mainly local interest? If the latter is true, it may be better placed in a national journal than in an international one.

The structure of an article

- ◆ Scientific writing follows a rigid structure. A format developed over hundreds of years and considered to be the most efficient means for communicating scientific findings to the broader research community. Moreover, the format has the advantage that it allows the article to be read at several levels. Some people will refer to just the title, others may read only the title and abstract, while those who want a deeper understanding will read most, if not all, of the article.
- ◆ Most disciplines use the format of title, authors, abstract, keywords, introduction, methods, results, discussion, acknowledgments, references and supplementary material. Though the headings are standard for most journals, there is some variation, so it is essential to read the guide for authors of the journal you intend to submit your article to prior to writing.

The structure of an article

Section	Purpose
Title	Clearly describes contents
Authors	Ensures recognition for the writer/s
Abstract	Describes succinctly what was done
Keywords	Ensures the article is correctly identified in abstracting and indexing services

Main text	Purpose
Introduction	Explains the hypothesis
Methods	Explains how the data were collected
Results	Describes what was discovered
Discussion	Discusses the implications of the findings
Acknowledgments	Ensures those who helped in the research are recognized
References	Ensures previously published work is recognized
Supplementary material	Provides supplementary data for the expert reader

Style and language

It is important to refer to the journal's guide for authors' notes on style. Some authors write their article with a specific journal in mind, while others write the article and then adapt it to fit the style of a journal they subsequently choose.

Regardless of your preference, some fundamentals remain true throughout the process of writing a scientific article. The object is to report your findings and conclusions clearly, and as concisely as possible; try to avoid embellishment with unnecessary words or phrases. The use of the active voice will shorten sentence length. For example, *carbon dioxide was consumed by the plant... is in the passive voice. By changing to the active voice it can be shortened to the plant consumed carbon dioxide...* The following shows how tenses are most often used in science writing:

- For known facts and hypotheses, the present tense should be used.
The average life expectancy of a honey bee is 6 weeks.
- When you refer to experiments you have conducted, the past tense should be used.
All the honey bees were maintained in an environment with a consistent temperature of 23°C.
- When you describe the results of an experiment, the past tense should be used.
The average life span of bees in our contained environment was 8 weeks.

If English is not your first language it is recommended that you ask a native English speaker to review the article before you submit it for publication. Alternatively you could use a language editing agency.



Authors

Authors



Authors

- The listing of authors should only include those who have made an intellectual contribution to the research, who will publicly defend the data and conclusions, and who have approved the final version. The order in which the names of the authors appear can vary from discipline to discipline. In some fields the corresponding author's name appears first.

Title

- A title should describe the article's content clearly and precisely, and allow the reader to decide whether it would be appropriate to consult the article further.
- The title is the advertisement for the article – a poorly titled article may never reach its target audience, so be specific. Omit unnecessary words such as 'A study of', 'Investigations of', 'Observations on', etc.
- Do not use abbreviations and jargon. Indexing and abstracting services depend on the accuracy of the title, extracting keywords from it that are used in cross-referencing.

Keyword list

- Some journals request a keyword list; this list provides the inclusion of important words, in addition to those already present in the title.
- Appropriate choice of keywords will increase the likelihood of your article being located by other researchers. These words are used by the indexing and abstracting services.
- Many journals will also require authors to choose a subject classification during the online submission process.
- This classification helps editors to select appropriate reviewers.

Abstract

- The abstract should summarize, in 50 to 300 words, the problem, the method, the results, and the conclusions.
- The title is the simplest statement about the content of your article.
- In contrast, the abstract allows you to elaborate on each major section of the article. The abstract should give sufficient detail so that the reader can decide whether or not to read the whole article.
- Together, the title and the abstract should be able to stand on their own, as they are processed further by abstracting services. For this reason it is advisable not to include references to figures or tables, or citation of the reference in the abstract.
- Many authors write the abstract last so that it accurately reflects the content of the article.

Main text

Introduction

- The introduction should be brief, ideally one to two paragraphs long. It should clearly state the problem being investigated, the background that explains the problem, and the reasons for conducting the research.
- You should summarize relevant research to provide context, state how your work differs from published work and importantly what questions you are answering. Explain what findings of others, if any, you are challenging or extending.
- Briefly describe your experiment, hypothesis(es), research question(s), and general experimental design or method.
- Lengthy interpretations should be left until the Discussion.

Methods

- (Materials and Methods or Experimental Methods, etc.) The key purpose of this section is to provide the reader enough details so they can replicate your research.
- Explain how you studied the problem, identify the procedures you followed, and order these chronologically where possible. If your methods are new, they will need to be explained in detail; otherwise, name the method and cite the previously published work, unless you have modified the method, in which case refer to the original work and include the amendments.
- Identify the equipment and describe materials used and specify the source if there is variation in quality of materials.
- Include the frequency of observations, what types of data were recorded. Be precise in describing measurements and include errors of measurement.
- Name any statistical tests used so that your numerical results can be validated.
- It is advisable to use the past tense, and avoid using the first person, though this will vary from journal to journal.

Results

- In this section you objectively present your findings, and explain in words what was found. This is where you show that your new results are contributing to the body of scientific knowledge, so it is important to be clear and lay them out in a logical sequence.
- Raw data are rarely included in a scientific article; instead the data are analyzed and presented in the form of figures (graphs), tables, and/or descriptions of observations.
- It is important to clearly identify for the reader any significant trends. The results section should follow a logical sequence based on the table and figures that best presents the findings that answer the question or hypothesis being investigated.
- Tables and figures are assigned numbers separately, and should be in the sequence that you refer to them in the text.
- Figures should have a brief description (a legend), providing the reader sufficient information to know how the data were produced.
- It is important not to interpret your results - this should be done in the Discussion section.

Discussion

- In this section you describe what your results mean, specifically in the context of what was already known about the subject of the investigation. You should link back to the introduction by way of the question(s) or hypotheses posed.
- You should indicate how the results relate to expectations and to the literature previously cited, whether they support or contradict previous theories.
- Most significantly, the discussion should explain how the research has moved the body of scientific knowledge forward.
- It is important not to extend your conclusions beyond what is directly supported by your results, so avoid undue speculation.
- It is advisable to suggest practical applications of your results, and outline what would be the next steps in your study.

Acknowledgments



- This section should be brief and include the names of individuals who have assisted with your study, including, contributors, reviewers, suppliers who may have provided materials free of charge, etc.
- Authors should also disclose in their article any financial or other substantive conflict of interest that might be construed to influence the results or interpretation of their article.

References

- Whenever you draw upon previously published work, you must acknowledge the source.
- Any information not from your experiment and not "common knowledge" should be recognized with a citation. How citations are presented varies considerably from discipline to discipline and you should refer to the guide for authors for the specific journal.
- Quotes that appear in the article, if long, should have their own indented paragraph. Otherwise, if they are in the natural flow of the article they should be within quotation marks. In both cases they should include a reference.
- The references section that appears at the end of the article includes all references cited in your article.
- This section is in contrast to a bibliography, common in books, where works read but not necessarily cited in the text are listed.
- The manner in which references are presented also varies from journal to journal and you should consult the journal's guide for authors.

Supplementary material

- Typically raw data are not included in a scientific article. However, if you believe the data would be useful, they can be included.
- Increasingly this is becoming more common as journals move to an online environment and the cost of including supplemental material is lowered.
- Supplementary material can include raw data tables, video footage, photographs, or complex 3D models.
- If you have more than one set of materials to include, give each a separate number e.g. Appendix 1, Appendix 2, etc.

Language editing and quality

How important is the quality of the English language in an article?

- The findings reported in an article may be cutting edge, but poor language quality – including errors in grammar, spelling or language usage – could delay publication or could lead to outright rejection of the article, preventing the research from receiving the recognition it deserves.
- With ever-increasing standards of excellence in both research and publishing, it is in an author's best interest to make sure his/her article is in its best possible form when submitted for publication - that includes the quality of the written English, adherence to the guide for authors and the presentation of factual, accurate data.
- In fact, we hear from numerous editors that the poor quality of English masks the possible academic merit of some articles and they will return the article to the author. Editors find it increasingly hard to find reviewers for articles and so there is an increased pressure to send articles to review out in good English.

What impact does language quality have on the peer-review process?

- Once an article enters the peer-review process, it will be evaluated by both reviewers and editors on its academic content and merit.

The responsibility of providing an article written in a reasonable standard of English, and structured with adherence to the guide for authors, lies with the author. Editors and reviewers are not responsible for making language corrections.

Well-structured articles with correct language usage help ensure that the peer-review process runs smoothly by allowing editors and reviewers to focus on academic merit, and could result in the faster publication of research.

What should authors do before submitting an article?

We suggest authors consider using a language editing service to improve the English language usage and quality of an article. A number of language editing companies provide their services to our authors at competitive rates.

Choosing the right journal, article formatting and cover letter

Check aims and scope of the journal to see if your article is a good fit.

Check if the journal is invitation only. Please be aware that some journals will only accept invited articles.

Submit only to one journal at a time.

Check the guide for authors which will include information on the types of article accepted, editorial team contacts, graphics specification, acceptable language and article length.

Format your article

In addition to being properly written, your article should be properly formatted.

We accept most word processing formats (Microsoft Word, WordPerfect or LaTeX is preferred).

Please see your journal's guide for authors to check the style of the individual journal, and particularly the reference style. By submitting an article in the journal's preferred style, fewer changes will need to be made later on, reducing the possibility of errors being introduced. Visit <http://www.elsevier.com/authors>, select journal and click on guide for authors.

Most formatting codes are removed or replaced when we process your article, so there is no need for you to use excessive layout styling.

Please do not use options such as automatic word breaking, justified layout, double columns or automatic paragraph numbering (especially for numbered references).

You may use bold face, italic, subscripts, superscripts, etc., as appropriate.

When preparing tables, if you are using a table grid, please use only one grid for each separate table and not a grid for each row. If no grid is used, use tabs to align columns (instead of spaces).

When you create your article, as a general rule, please make sure it appears in the following order, although please check each journal's guide for authors for specific instructions.

Section

Title

Authors

Abstract

Keywords

Purpose

Clearly describes contents

Ensures recognition for the writer/s

Describes succinctly what was done

Ensures the article is correctly identified in abstracting and indexing services

Main text

Introduction

Methods

Results

Discussion

Acknowledgments

References

Supplementary material

Explains the hypothesis

Explains how the data were collected

Describes what was discovered

Discusses the implications of the findings

Ensures those who helped in the research are recognized

Ensures previously published work is recognized

Provides supplementary data for the expert reader

Illustrations

Submitting your illustrations, pictures, tables and other artwork such as multimedia and supplementary files in an electronic format helps us produce your work to the best possible standards, ensuring accuracy, clarity and a high level of detail.

Produce your cover letter

All submissions must be accompanied by a cover letter detailing what you are submitting and which journal you are submitting to.

Please indicate:

The author to whom we should address our correspondence. (In the event of multiple authors, a single corresponding author must be named.)

E-mail address, contact address and telephone/fax numbers.
(Authors receive PDF proofs by e-mail.)

Details of any previous or concurrent submissions.

It is also useful to provide the editor-in-chief with any information that will support your submission (e.g., original or confirming data, relevance, topicality).

Any conflict of interest in producing the research (e.g., funding resources).

Note:

When your article is received by the journal, it is considered to be in its final form. Therefore, please check your article carefully before you submit.

Peer review

Our primary research journals are peer reviewed and independently edited by acknowledged experts in their fields.

Reviewers are appointed by the journal editor.

Peer review has two key functions:

- To act as a filter by ensuring only good research is published to determine the validity, significance and originality of the work.
- To improve the quality of research submitted for publication by giving reviewers the opportunity to suggest improvements.
- **Some journal editors will ask authors to provide the names of possible reviewers.**

Different types of peer review

Type of review

Single blind
Double blind
Open
other

Description

Names are hidden from author
Both reviewer and author remain anonymous
Reviewer and author are known to each

Reviewers will then make a recommendation to the editor to accept, accept with revisions or decline the article.

After your article has been accepted

Once your article is accepted for publication, it will be published online on ScienceDirect as an article in press and allocated a Digital Object Identifier (DOI). The DOI means articles can receive citations immediately. Further information is available on <http://www.doi.org>. Articles in press will be assigned an issue at a later date. You are able to track the status of your article throughout the publication process by visiting <http://authors.elsevier.com/trackpaper.html>

The process is outlined below:

Registration:

- Giving your article a unique reference number
- Checking your article for completeness
- Checking your artwork for clarity and usability
- Sending the corresponding author an acknowledgment e-mail with the reference number that can be used to track the article
- Sending the corresponding author a Journal Publishing Agreement

Production:

- Ensuring your artwork is added properly
- Creating a proof copy to be sent to the corresponding author for final review
- Further explanation of this process is below*

Publication:

- Correcting any errors you identify on the proof copy
- Making the article available as an article in press online on ScienceDirect
- Giving your article a volume number, issue number and page numbers
- Sending the final copy to the printer
- Distributing the printed journal to subscribers

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PDF e-offprints will be e-mailed within 24 hours of an article appearing online on ScienceDirect. If printed offprints are ordered in place of e-offprints, these are usually dispatched within 6-8 weeks of issue publication. You can check the dispatch date using the article tracking facility. Please note that delivery times depend on the destination.

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1. Complete a Journal Publishing Agreement
2. If printed offprints are required, complete an offprint order form
3. Review a proof copy to check for errors or add missing details

***Production process**

Production

When the completed article is ready to enter the production process, it is copy-edited in the style of the journal, typeset, and structured for online publishing. The artwork is sized and scanned according to the required specifications and a page proof is generated for you to carry out a final check.

Proofreading

As soon as your article has been typeset, page proofs as a PDF file will be sent to the corresponding author (If we do not have an e-mail address, article proofs will be sent by post.) This usually happens 4-5 weeks after we receive your complete article.

Accurate proofreading and clear marking of corrections are essential for the production of a quality article. Please note that careful proofreading is solely your responsibility. Please mark any necessary corrections in a distinct manner.

Editors will do everything it can to have your article corrected and published as quickly and accurately as possible. Therefore, it is important to ensure that all of your corrections are sent back to us in one communication

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As a journal author, you retain rights for a large range of author uses of your article, including use by your employing institute or company. These rights are retained and permitted without the need to obtain specific permission from the editor.

These include:

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- **Authors may make print or electronic copies of the article for use in classroom teaching or for his or her personal use.**

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- **An article can be made available to the author's institution or company e course packs or company training.**

Scholarly sharing

- **Copies of the article can be shared with research colleagues.**

Meetings and conferences

- **Articles can be presented and copies made for attendees**

Further works

- **Articles can be used in compilations, expanded to book form or used in theses or dissertations**

Patent and trademark rights

- **The right to use the article for any inventions disclosed or products identified.**

Websites

- **Authors may post a pre-print version of the article online on websites and a revised version on institutional or personal websites, incorporating a link to the Digital Object Identifier (DOI) of the article.**

Ethics and plagiarism

The publication of an article in a peer-reviewed journal is an essential building block in the development of a coherent and respected network of knowledge. It is a direct reflection of the quality of the work of the authors and the institutions that support them.

An important role of the publisher is to support the extensive efforts of external journal editors to ensure that articles follow ethical guidelines and authors' work is protected.

Author responsibilities

Reporting standards

• **Authors of original research should present an accurate account of the work performed as well as an objective discussion of its significance.**

Data access and retention

• **Authors may be asked to provide the raw data in connection with an article for editorial review, and should be prepared to provide public access to such data.**

Originality and plagiarism

• **Authors should ensure that they have written entirely original works, and if the authors have used the work and/or words of others, that this has been appropriately cited or quoted.**

Multiple publication

• **Authors should not publish articles describing essentially the same research in more than one journal or primary publication.**

Acknowledgment of sources

• **Proper acknowledgment of the work of others must always be given**

Permissions

• **Authors are responsible for seeking (and paying) for permission to use third-party material.**

Authorship of the article

• **Limited to those who have made a significant contribution to the conception, design, execution, or interpretation of the reported study. All those who have made significant contributions should be listed as co-authors. Where there are others who have participated in certain substantive aspects of the research project, they should be acknowledged or listed as contributors.**

Conflicts of interest

• **Authors should disclose in their article any financial or other substantive conflict of interest that might be construed to influence the results or interpretation of their article.**

Fundamental errors in published works

• **When an author discovers a significant error or inaccuracy in his/her own published work, it is the author's obligation to promptly notify the journal editor or publisher and cooperate with the editor to retract or correct the article.**

Impact Factors and other quality measures

Impact Factor

The Impact Factor is the most widely referenced quality measure amongst academic publications. It is defined as the ratio between citations and recent citable articles published in a journal; the average number of citations received per published article. The following is an explanation of how Thomson Reuters calculate Impact Factors.

Calculating Impact Factors

Citations in 2007 to articles published in: 2006 187 total citations
2005 318 total citations
Sum 505

Number of articles published in: 2006 54 total articles
2005 46 total articles
Sum 100

Calculation: 505 Total citations to articles published in 2005 and 2006
100 Number of articles published in 2005 and 2006
The 2007 Impact Factor for the journal is **5.050**

Impact Factors vary greatly by subject discipline and comparison is only meaningful within the same subject category or group.

H-index

The H-index rates a scientist's performance based on his or her career publications, as measured by the lifetime number of citations each article receives. The measurement is dependent on both quantity (number of publications) and quality (number of citations) of an academic's publications.

If you list all of a scientist's publications in descending order of the number of citations received to date, their H-index is the highest number of their articles, H, that have each received at least H citations. So, their H-index is 10 if 10 articles have each received at least 10 citations; their H-index is 81 if 81 articles have each received at least 81 citations. Their H-index is 1 if all of their articles have each received 1 citation, but also if only 1 of all their articles has received any citations.

How is the H-index different from the Impact Factor?

The main difference is that the H-index refers to the performance of an individual scientist or journal.

- The H-index is based on lifetime citations received by a scientist's articles. The Impact Factor is based on only 2 years' worth of citations.
- Both rankings measure the average performance of an individual scientist or a journal. Some articles will receive many more citations, and some fewer, than the ranking figure.

Usage

Usage is a new concept for measuring journal value and impact. It can be defined as how often the full-text article is downloaded or viewed. Counting Online Usage of Networked Electronic Resources (COUNTER) is attempting to standardize usage reporting and develop a Usage Factor metric.

Libraries already use usage statistics heavily to evaluate their collections and spending. Authors are also interested to see how much their work is downloaded.



Thank you...