

Part V

Perform a bibliographic search

V.1 Introduction

Performing a literature review is a crucial step in any scientific research project. This work helps to ensure that the research problem being considered is original and has not been addressed in the past. It also allows us to situate it in a more global context. For example, you will need to do this when writing your master's or doctoral thesis. This document aims to help a student in **Statistics** in his/her approach.

V.2 Search for records / articles / books

A first step is to understand the subject in order to be able to **define a list of keywords** associated with the research that you want to lead. These keywords should be in English, and possibly in your mother tongue if different from English.

Below we list some search engines (of the existence of an article or a book) available on the Internet that you will have to use to **constitute a list of bibliographical references** (= records). These engines are ranked in descending order of preference (mine ...). Please note that some of these resources (indicated by a *) are only accessible from a computer connected to the university network.²

- Google scholar <https://scholar.google.com.au/>
- Mathscinet* <http://www.ams.org/mathscinet/search> (Mathematics and Statistics)
- CIS* <https://www.statindex.org/> (only Statistics)
- ArXiv http://arxiv.org/multi?group=grp_stat&%2Fform=Form+Interface (Repository of electronic preprints (known as e-prints))
- ArXiv-UCDavis <http://front.math.ucdavis.edu/> (Repository of electronic preprints (known as e-prints))
- Ieeexplore <http://ieeexplore.ieee.org/search/advsearch.jsp> (journal articles, conference proceedings, technical standards, and related materials on computer science, electrical engineering and electronics, and allied fields)
- Pubmed <http://www.ncbi.nlm.nih.gov/pubmed/advanced> (accessing primarily the MEDLINE database of references and abstracts on life sciences and biomedical topics)

²However, off-campus access is possible. See the following page for more details: <https://www.library.unsw.edu.au/study/access-to-online-resources>

- Google book search <http://books.google.com/> (consult the content of a book)
- Libgen <http://gen.lib.rus.ec/> (download books: PDF or DJVU)
- Libgen <https://sites.google.com/site/themetalibrary/library-genesis> (download books: PDF or DJVU)
- Scopus* <http://www.scopus.com/>
- Zentralblatt* <http://www.zentralblatt-math.org/stmaz/>
- Zentralblatt <https://zbmath.org/>
- ISI web of knowledge* <http://isiknowledge.com/> (all fields)
- ERAM <http://www.emis.de/MATH/JFM/JFM.html> (The Jahrbuch Project Electronic Research Archive for Mathematics)
- ISBN.nu <http://isbn.nu/> (Search by ISBN)
- BASE <http://base-search.net/>
- CORE <https://core.ac.uk/>
- Paperity <http://paperity.org/>
- Worldcat <http://www.worldcat.org> (world's largest network of library content and services)
- Proquest <https://search.proquest.com/> (search for theses in North-America universities)
- CiteULike <http://www.citeulike.org/>

The list of keywords must be refined (as well as the subject of research eventually) in an **iterative process**. Indeed, reading articles, books or excerpts of web pages can lead to the adoption of new keywords that will bring up new articles, and so on.

V.3 Retrieval of records / articles / books

When you find an interesting bibliographic entry (see Section V.2), it is advisable to adopt the following approach:


1. retrieve the article or the book (see below);
2. skim it³ (without printing, thank you for the environment and for the resources of the School!);

³Sometimes reading the summary is enough.

V.4. ORGANISATION OF THE RECORDS AND OF THE DOWNLOADED FILES³⁵

3. make the decision whether or not to keep this article.

To retrieve an article or a book (in PDF format or other), you can:

- click on the button  in Mathscinet;
- go to the website of the journal in which the article was published;
- consult the authors' web page;
- borrow it from the library (check its availability on <https://usearch.library.unsw.edu.au>; localise the item with its shelf number), then scan⁴ the document;
- as a last resort, contact one of the authors of the article by email.

Here are some links to some sites regrouping several statistical journals authorizing the complete download of the PDF files of the articles there:

- JSTOR* <http://www.jstor.org/action/showJournals#43693424>
- DOAJ <http://www.doaj.org/>

Note: Each article retrieved contains a section of bibliographic references. This can be used to update the list of your keywords or the list of articles and/or books to retrieve. Another tip is to type the title of a given article in Google Scholar (<http://scholar.google.com.au>) and then click on the link **Cite x times**. This allows you to find other works that reference this article. It is therefore an iterative process!

V.4 Organisation of the records and of the downloaded files

It is interesting to set up an effective procedure for managing your bibliographic records, and the PDF documents that you have decided to keep.


For this, we recommend to:

1. create an ASCII text file, named `mybiblio.bib`, which will contain **BibTeX** entries⁵ of all selected bibliographic references gathered during your bibliographic search;
2. create a folder named `ItemsAndBooks` that will contain the PDF files corresponding to the articles/books described in the `mybiblio.bib` file.

⁴A scanner is available in the printing rooms.

⁵See Section V.5.

It is strongly discouraged to type a BibTeX entry by hand (it is a source of errors!). Use tools such as:

- Mathscinet (www.ams.org/mathscinet/) click on  to select and display the selected entry in the BibTeX format;
- IEEE BibConverter (<http://www.bibconverter.net/ieeexplore/>) export to BibTeX from Ieeexplore
- TeXMed (<http://www.bioinformatics.org/texmed/>) export to BibTeX from PubMed

Notes:

- We recommend to classify your references in the `mabiblio.bib` file in alphabetical order of the codes used ⁶
- The `ArticlesAndBooks` folder should contain subfolders, for example to classify files by project.
- The names of the files of the books/articles saved will be in lowercase letters and will respect the following convention: *name of the author* followed by *year of publication*, without spaces. For example: `bilodeau2009.pdf` (and possibly `bilodeau2009a.pdf`, `bilodeau2009b.pdf`, etc. if there are multiple entries from the same author the same year).

V.5 Using BibTeX

BibTeX is an opensource and free software that should be used with L^AT_EX to produce a document (article or thesis) that contains a section of bibliographic references. The entries in a `.bib` file have a particular format. For example, the entry for an article may look like this.

```
@article {bilodeau2009,
  AUTHOR = {Bilodeau, M. and Lafaye de Micheaux, P.},
  TITLE = {{{A$}-dependence statistics for mutual and serial
            independence of categorical variables}},
  JOURNAL = {J. Statist. Plann. Inference},
  FJOURNAL = {Journal of Statistical Planning and Inference},
  VOLUME = {139},
  YEAR = {2009},
  NUMBER = {7},
  PAGES = {2407--2419},
}
```

⁶See Section V.5.

Note that the information present on the first line, just after `@article` {, namely here `bilodeau2009`, is a **code** which will have to be used in the body of your \LaTeX document to cite that article. I advise you to adopt the previous convention for all your codes, namely: *name of the author*, followed by *year of publication*.

Here's an example to save in a `test.tex` file:

```
\documentclass{article}

\begin{document}

Article \cite{bilodeau2009} is now cited!

% Inclusion of the bibliographic section
\bibliographystyle{plain} % Style of the bibliography
\bibliography{mybiblio} % Your .bib file (without the extension)

\end{document}
```

You will need to compile this document via \LaTeX and BibTeX:

```
pdflatex test.tex
bibtex test.aux
pdflatex test.tex
pdflatex test.tex
```

then open it with Acrobat Reader for example.

Note: Personally, I manage my bibliographic references in BibTeX with the Emacs software: <http://www.gnu.org/software/emacs/#Obtaining>

V.6 Additional information

To obtain the *impact factor* (a questionable measure indicating whether a journal is widely read) of the main statistical journals:

<http://admin-apps.isiknowledge.com/JCR/JCR>.

Table of correspondences between the abbreviations used in the references of the mathematical and statistical articles and the long versions of these:

<http://www.journalabbr.com/>.

Par exemple: Ann. Stat. pour Annals of statistics.

List of the main journals in statistics:

<http://www.biostatisticien.eu/alfjourn.html>.

Exercise

You can practice by searching for articles describing how to calculate the law of a weighted sum of chi-squared random variables.