

## Writing About Operations Research – Literature Review

### 1 The literature review section

- In operations research, the **literature** consists of:
  - journal articles,
  - conference proceedings,
  - government and corporate reports,
  - theses and dissertations,
  - books.
- The purpose of the **literature review** is to:
  1. summarize existing literature that is relevant to your project,
  2. describe how this literature relates to each other and your project.
- In other words, the literature review tells a coherent story of what previous researchers and analysts have done, and how their work is related to your project.
- The literature review is not a simple summary of some related articles and books.
- Suggested approach:
  - Use the library resources to find relevant literature.
  - Triage. Start by reading the abstract, introduction, and conclusion sections. If you still think the work is relevant, read it more carefully.
  - Write as you go. Start by taking notes, and gradually flesh them out. Reorganize as necessary. Write many drafts. Writing is a way of thinking.
- Going through this process will hopefully give you a better idea of how you might approach your project.
- Guidelines for your literature review section:
  - Your literature review should include at least 10 relevant works.
  - Do not use word-for-word quotations (direct quotes). This would be considered unusual in the operations research literature. Paraphrase instead.
  - Use the APA citation and reference style (see below).

### 2 APA citation and reference style

- There is no standard style for citations and references in the operations research literature.
- For this course, we will use the APA (American Psychological Association) style, which is similar to what many operations research journals use.
- Below, you'll find examples of common types of in-text citations and references.
- You can find a much more detailed guide here: <https://owl.english.purdue.edu/owl/resource/560/01/>

## In-text citations

**Summary or paraphrase.** Include the author's last name and the date either in a signal phrase or in parentheses at the end.

Saltzman (2009) asserts that integer programming significantly reduces the amount of time spent constructing what is to be considered a good, feasible schedule.

The scheduling process often begins well in advance due to university planning requirements (Waterer 1995).

**A work with two authors.** Name both authors in the signal phrase or parentheses each time you cite the work. In the parentheses, use "&" between the authors' names; in the signal phrase, use "and."

For example, Chen and Zhang (2009) discussed how to modify their allocation of expected cost into an allocation of realized cost.

Another difficult, but common and beneficial set of constraints consistently implemented in more recent formulations is referred to as "room stability" (Lach & Lübbecke 2008).

**A work with three to five authors.** Identify all authors in the signal phrase or the parentheses the first time you cite the source.

In particular, Kranich, Perea, and Peters (2005) studied the strong sequential core of a dynamic cooperative game, which we adapt to the setting we study here.

In subsequent citations, use the first author's name followed by "et al." in either the signal phrase or the parentheses.

This set of constraints requires multi-period courses to be taught in consecutive periods and has been known to make the problem NP-hard (Daskalaki et al. 2004).

**A work with six or more authors.** Use only the first author's name followed by "et al." in all citations.

## Reference list

### General guidelines.

- Put your reference list in a separate section titled "References."
- Your references should be listed in alphabetical order, based on the first author's last name.
- Italicize titles and subtitles of books. Capitalize only the first word of the title and subtitle, as well as all proper nouns.
- Capitalize only the first word of the title and subtitle of articles.
- For each entry in your reference list, indent every line after the first line. This is called **hanging indentation**.
- Only include references you cite in your report. Do not include other references, even if you have read them.

### Article in a journal paginated by volume.

Bertsimas, D. & Brown, D. B. (2009). Constructing uncertainty sets for robust linear optimization. *Operations Research*, 57, 1483-1495.

### Article in a journal paginated by issue.

Martin, C. H. (2004). Ohio University's College of Business uses integer programming to schedule classes. *Interfaces*, 34(6), 460-465.

### **Conference proceedings.**

Edmonds, J. (1970). Submodular functions, matroids, and certain polyhedra. In R. Guy, H. Hanani, N. Sauer, & J. Schönheim (Eds.), *Combinatorial Structures and Their Applications (Calgary International Conference on Combinatorial Structures and Their Applications)* (pp. 442-454). New York, NY: Gordon and Breach.

### **Government document.**

United States Naval Academy. (2016). *Academic Dean and Provost Notice 5420.1: Periodic Program Review/Visiting Committee Additional Information*. Annapolis, MD: Author.

### **Report from a private organization.**

American Psychiatric Association. (2000). *Practice guidelines for the treatment of patients with eating disorders* (2nd ed.). Washington, DC: Author.

### **Book.**

Grötschel, M., Lovász, L., & Schrijver, A. (1993). *Geometric algorithms and combinatorial optimization*. Berlin: Springer.

## **References**

- Paiz, J. M., Angeli, E., Wagner, J., Lawrick, E., Moore, K., Anderson, M., Soderlund, L., Brizee, A., Keck, R. (2016). *OWL: APA formatting and style guide*. Retrieved from <https://owl.english.purdue.edu/owl/resource/560/1/>
- Hacker, D. (1995). *A writer's reference*. (3rd ed.). New York: St. Martin's.
- Ogren-Balkema, M. (2005). *How to write a mini literature review* [PDF document]. Retrieved from [https://ocw.mit.edu/courses/biology/7-16-experimental-molecular-biology-biotechnology-ii-spring-2005/scientific-comm/lec05\\_mpominirev.pdf](https://ocw.mit.edu/courses/biology/7-16-experimental-molecular-biology-biotechnology-ii-spring-2005/scientific-comm/lec05_mpominirev.pdf)