



Research Writing

Twelve Steps to Developing Effective Tables and Figures

Source: San Francisco Edit newsletter

Prof.Dr. Özer ÇINAR
Yıldız Technical University
Department of Environmental Engineering
İstanbul, Turkey

The purpose of tables and figures is to report data too numerous or complicated to be described adequately in the text and/or to reveal trends or patterns in the data. Tables and figures are **critical**. If readers go beyond the abstract, they are likely to examine the tables and figures next.

Before writing the first draft of your manuscript, it is important to organize the data you plan to present in the manuscript. By preparing the tables and figures, their titles and legends, and appropriate statistical analyses, you will be certain of your results before you need to interpret them. At this time you will also be able to determine if you have all the data you need.

Before writing the first draft, it is important to plan which results answer the questions you posed in your research and which data can be left out.

1. **Decide which results to present**, paying attention to whether data are best presented within the text or as tables or figures.
2. **Limit the number of tables and figures to those that provide essential information** that could not adequately be presented in the text.
3. **Include only results which are relevant to the question(s) posed in the introduction**, irrespective of whether or not the results support the hypothesis(es).
4. **Design each table and figure to be understandable** on its own, without reference to the text.
5. **Number each figure and table** in the order in which they are referred to in the text (figures and tables are numbered separately).

6. Organize the tables and figures in such an order that they tell a story.
7. Check with the targeted journal, but typically tables and figures are located on separate pages that follow the Reference section.
8. Make sure there is no page break in the middle of a table or figure, if the journal wants the tables and figures integrated into the text. Do not wrap text around tables and figures.
9. Be sure all figures and tables are referenced in the text of the article.
10. Obtain permission from the copyright holder (usually the publisher) and acknowledge the source, if you are including a table or figure that has already been published.

11. Write the table titles and figure legends in the past tense.
12. Provide information regarding what is presented in the table or figure in the table titles and figure legends, but not a summary or interpretation of the results.

Tables

Tables are used to make an article more readable by removing numeric data from the text. Tables can also be used to synthesize existing literature, to explain variables, or to present the wording of survey questions.

1. Create tables with the table function (pull down menu) in Microsoft Word. Do not use tabs.
2. Check with the journal, but most journals want the table title and table on the same page, with each table on a separate page in numerical order.

Figures

Figures provide visual impact and therefore they are often the best way to communicate the primary finding. Figures are traditionally used to display trends and group results but can also be used effectively to communicate processes or to display detailed data simply.

1. Label each axis including units of measurement and clearly identify the data you are displaying (e.g. label each line in a graph).
2. Check with the journal, but most want the figure legends listed in numerical order on a separate page and each figure on a separate page in numerical order.
3. Figures should be of high image quality, with minimal pixelization. Check with the journal on which image file type they prefer.

4. **Figures are usually in black and white.** Color is extremely expensive to publish, and should only be used when it provides unique information.
5. **Do not include experimental details in the legend;** these details should be included in the methods section.
6. **Photographs of subjects should be used** only if written, informed consent was obtained prior to the taking of the photograph.
7. **Choose the correct figure format:** 1) if independent and dependent variables are numeric, line diagrams or scattergrams, 2) if only the dependent variable is numeric, bar graphs, 3) for proportions, bar graphs or pie charts.



Thank you...