

CHAPTER TWENTY-FIVE

MAPPING RESEARCH REPORTS WITH TABLES, CHARTS AND FIGURES

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Introduction

Research is a process that involves investigation in a chosen field or subject with the aim of making new findings / discoveries or acknowledging an already existing fact. In view of this, the researcher has to constantly give feedback on the investigation to keep the reader abreast on the findings of the research. Kothari (2004:1) defines research as “a scientific and systematic search for pertinent information on a specific topic...an art of scientific investigation...a careful investigation or inquiry especially through search for new facts in any branch of knowledge”. As for Creswell (2012:3), research is “a process of steps used to collect and analyze information to increase our understanding of a topic or issues”. Simply put, research “... involves compilation and validation of information to an exhaustive theory and model construction” (Chawla & Sondhi: 2014). It therefore becomes imperative for the researcher to make use of systematic tools that will shed more light on his work. Apart from the fact that a research should be well organised, several studies, guidelines and discourses on scientific writing affirm the critical roles that tables, figures and graphs (or displaying items) play in enhancing the quality of manuscripts. That is why “tables and figures are an integral part of a well-written scientific paper, not an adjunct”. This paper therefore provides some essential guidelines for the effective use of tables, and figures in a standard research work.

When to Use Tables, Charts and Figures

The decision to use tables or figures in a research paper is part of planning that begins at the manuscript writing itself as they all have specific roles to play. Therefore, as one prepares for the research, it is also advisable to consider whether a figure or a table is more appropriate. Those graphics may have been copied or adapted to one’s information sources or one may have created the data from one’s own research. Nevertheless, it is important that tables and figures are used purposefully, that is with good reasons. According to <http://www.une.edu.au/current-students/resources/academic-skills/fact-sheets> 28-03 2017:

- If the text is crowded with detail, especially quantitative detail, consider creating a table. Do not overload the text with information that could be presented better in a table.
 - Consolidate similar information into one table to let the reader compare easily. Do not make the reader search for related information.
 - If a table has only a few rows and columns, try stating the findings in a few sentences.
- Do not use too many small tables for information that could be presented better in the text.

- In a difficult prose explanation, decide whether it could be better described with a figure.
- Does your figure show more than could be said in a few well-chosen words? A figure is not always better.

However, while well presented tables and figures can efficiently capture and present information, poorly crafted tables and figures can confuse the reader and impair the effectiveness of a research. They are both (tables and figures) used to support conclusion or to illustrate concepts, but each has specific roles to play. It implies that the researcher has to decide what best goes where and when in the text.

The format for tables is different from the format for figures, each has its own numbering system and they are placed immediately after their mention in the text.

Tables

A table is a display of information in a succinct way. It should be designed such that enough spacing is created between columns and rows with a clean layout and legible font. Items should be easy to read and explanatory. A good table should have informative title that will tell the reader what to expect in the table. It also usually shows numerical textual information in columns and rows. The purpose of the content of the table should be clear enough to attract the attention of the reader. However, before a table is displayed, specific reference to it should be made in the paragraph, then place it immediately below the paragraph using the same font and size as the rest of the essay.

Table Number

Every table should be numbered and the number should be placed above the table. Table should be written in cap and low character, with space, number and a full stop or colon after the number. Tables must be numbered consecutively in order of appearance within the thesis. There are two types of numbering not only for tables, but for figures and other items that will be referred to in this work. On one hand, numbering can be done subsequentially throughout the thesis, article or report, i.e. table 1, table 2, table3, table 4 etc., in the exact order that they are placed in the text. On the other hand, a table can bear first the number of the chapter in which it appears then the number of the place of its own appearance in the write-up: Table 1.1 (first table to appear in chapter 1), Table 1.2 (second table to appear in chapter 1) or Table 2.1 (first table to appear in chapter 2), Table 2.2 (for second table in chapter 2), and so on and so forth. Whichever method one chooses, the numbering style must be consistent.

In-text reference to a table should include the relevant number and a brief explanation of the important features of the graphic element. e.g. as shown in table 4 (do not write “above” or “below” or use page numbers, because the position of the table is obvious in the text). However, when referring back to the table over two text pages earlier, include page numbers for the reader’s benefit. The choice of reporting verb is also very important because it should reflect the position of the writer towards the topic.

Table Title

The title of the table with maximal capitalization, and written in italics is to be placed beneath the number. It can also be written after the number, maintaining the same front of the text, i.e. table, space, colon, space, then title. The title of the table should not be vague; it should concisely describe the content of the table.

Table Note

Notes are written in smaller letter size (e.g.10pt) than the rest of the essay, cap and low, italicized, then full stop (cf.<http://www.une.edu.au/current-students/resources/academic-skills/fact-sheets>). Table notes take care of explanations of definitions and abbreviations followed by a reference note in the format of ‘reprinted from’ or ‘adapted from’ title, author, date, publisher details or retrieval URL. The reference information will then be transferred to the reference list.

In the absence of note, the source of the table should be written below the table with the same front as that of the essay, e.g. author, date and pages.

Example 1: Table numbered in order of appearance in the write-up

Table 1: Distribution of Attendance at the Theatre

Type	Number watching in 2016	Percentage [%]
Dance	5,700	34.6
Music	7,520	45.7
Drama	3,250	19.7
Total	16,470	100.0

Note. This table is describing the nature of performance that appeal to people who patronize a particular theatre hall by looking at the record of their attendance during presentations of dance, music and drama. Adapted from Descriptive statistical procedures in humanities research by Owolabi H.O. (2017: p 160)

Example 2: Table numbered in consonance with the number of the chapter and its position in it. This is the first table in chapter two

Table 2.1. Challenges of children from single parent families in Lagos state?

Challenges	Frequency/200	Percentage/100
Fear of the unknown	200	100%
Fear of educational continuity	198	99%
Fear of goal attainment (meeting future ambition such as career attainment)	97	48.5%
Inferiority complex amongst mates in school and social gathering	105	52.5%
Lack of self confidence	125	62.5%
Rejection from the society	149	74.5%

Street hawking	76	38%
Child slavery (domestic helps)	68	34%
Expression / extension of Hatred for the absentee parent gender	105	52.5%
Aggressive when the absentee parent is mentioned	177	58.5%

Source: Ebobo U. C. (2016:77)

Figures

A figure is an image or graphic that gives succinct information on the point one is trying to make. Figures can include photographs, diagrams, graphs, maps, or charts inserted into a research paper. Like tables, figures add value to the format of a research report if they are sufficiently informative. They can be copied, modified, adapted from text description, or be one's creation. After making specific reference to the figure in the paragraph, the figure can then be placed below it, using the same font as the rest of the essay.

Figure Number

The figure number is placed beneath the figure. The word 'figure' should be abbreviated to Fig., and every figure should be assigned a number, starting with number 1 for the first figure in the work as earlier said, e.g. Fig.1, Fig. 2, or Fig. 1.1. , Fig. 1.2., in case the chapter is taken into consideration in numbering. The type of numbering chosen has to be used consistently.

Figure Title

For a figure to be effective, it should have an informative title. Information about the figure (caption) is placed directly below the image. Always include an acknowledgement if the figure is reproduced or adapted from another source.

Figure Legends

They are very important to explain key messages in a figure, i.e. to explain abbreviations and symbols. Without them, the figure will be meaningless.

Give the essentials: For a figure to be more explicit, scale bar should be used in maps and images. Specify units whenever quantities are listed, specify latitude and longitude on maps

Examples of Well prepared Figures

Example 3: A pie chart

It is a picture that represents data in a circle form. The data on table 3 could be represented on a pie chart by finding the number of degrees equivalent to the percentage obtained for each performance as shown in the table. The circle is 360 degrees and each performance is going to be represented by determining the proportion or sector of the entire circle. Figure 1 is the result of that exercise.

Table 3: Sector of the Pie Chart Occupied by Each Performance

Type	Number watching in 2016	Percentage	Proportion of the circle
Dance	5700	34.6	125 ⁰
Music	7520	45.7	164 ⁰
Drama	3250	19.7	71 ⁰
Total	16470	100.0	360 ⁰

Source: Owolabi, H. O. (2017:164)

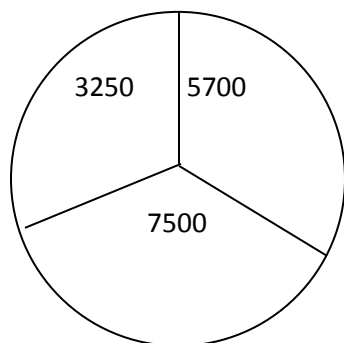


Fig. 1. Pie Chart of Performance in a Theatre Hall

Source: Owolabi, H. O. (2017:165)

Example 4: Bar Chart Showing the United State Population by Race

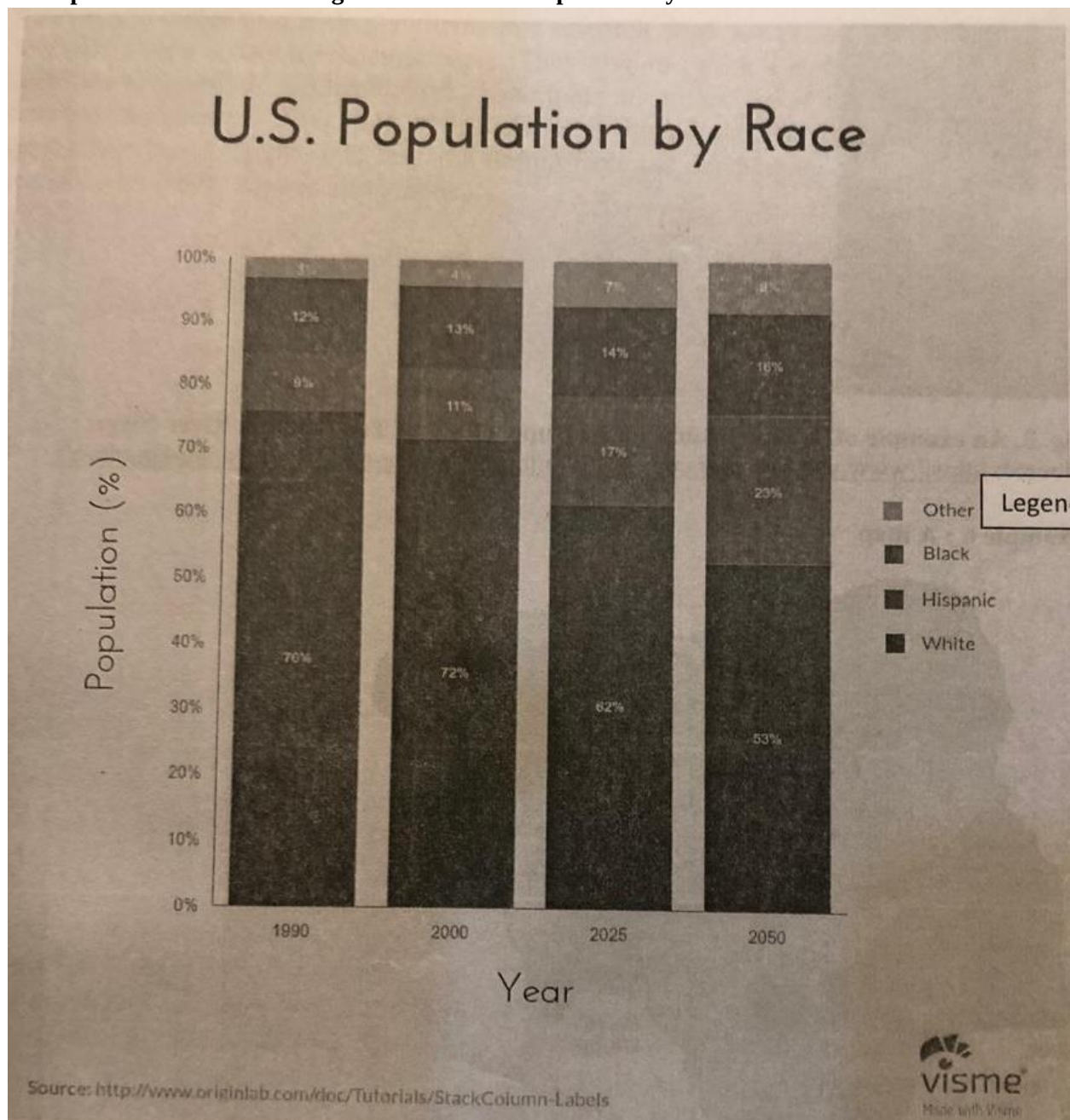


Fig. 2. Projecting US Population by Race from 1990 to 2050.

Source: www.originallab.com/doc/Tutorials/stackColum-labels (Accessed on 10-01-2018)

Example 5: Photography of Tosede bronze in Nupe village.



Fig. 3. An example of Tosede bronze in the Nupe village of Tada, on the River Niger.
(Source: <https://www.vanguardngr.com/2012/06/tosede-bronze-tradition-of-nupe-kingdom/>)

Example 6 : A map

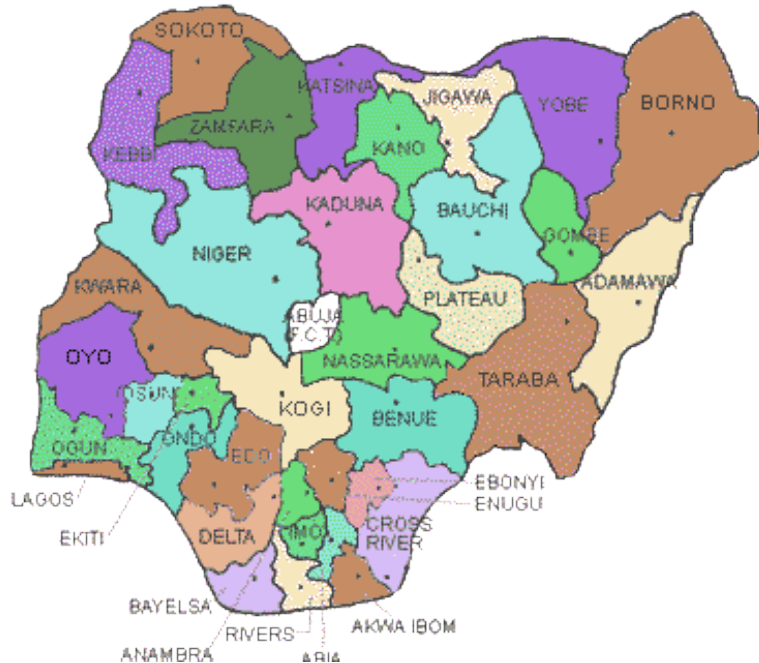


Fig. 4. Map of Nigeria Showing 36 States and FCT
(Source: <http://www.google.com-html,map>)

Conclusion

Figures and tables or any display items in a research work are powerful communication tools for a well research academic paper. They give the work a standard that is required from any professional academic work. Their main advantage lies in their abilities to elicit detailed information from data collection. It is hoped that this chapter would give researchers more insights into research design from the perspective of mapping research reports with tables, figures and graphs.

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