MAKING STATISTICS FRIENDLY TO USERS.

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ABSTRACT

Statistics have great potential to generate knowledge and serve as basis for decisions taken by policy makers and the public; however, the understanding of the facts and figures behind policies and political processes is confronted with growing difficulties. This is because many people do not know about statistics or do not care about them as they do not understand them. This paper explored innovative tools for exploring statistics and ways of disseminating them in such a way that it would be understood by the common man. The main focus of the paper is on methods to enhance the understanding and presentation of statistical data. This would be done to increase transparency regarding the National Statistical Systems, to foster the ability of critical data interpretation through the public, to prevent misuse of data, and to improve confidence in policies based on statistical data.

INTRODUCTION

Raw data on their own provide little, if any, information to the decision makers. Thus, there is need to convert the raw data into useful information. An effective data release to a general audience uses a combination of text, tables and graphics to maximize its strength in conveying various types of information. *News release* is one of the ways of disseminating information, it is the release of information that you hope the media will cover; a story you hope will be interesting to the public; a tight package much different from your statistical reports. This is the most effective way of communicating key findings of statistical and analytical programmes to the intended audience, which is most probably the general public. This brief summary is written in a way that journalists find "user-friendly", and which gives them interesting and newsworthy information in a format that requires little effort on their part to create good copy. The news release must be written to grab the attention of journalists and to fit into their agenda, and it must be presented in language they and the public can understand. You should bear in mind that you write a release only if you have a story to tell. Don't write a release because it is the routine thing to do. Remember, the story is not that you finished a report or have some data. The story is what the report had to say, or what the data mean.

For you to get across your message using a news release the producer should bear in some of these points:

➢ Determine who his audience is; in so doing would be able present information in a more reader friendly language. What the audience wants is what you should be giving them. You have to listen to your audiences to find and select the right narratives, language, and visual and graphic devices that will capture their attention.

➢ People easily understand things that are written in their own language or in a language they are familiar with. Keep in mind that you are not dealing with experts in statistics. If the audience is the media, then tell story about the numbers, if the general public, then write as if you are talking to a layman on the street. The use of simple language is at the heart of any successful communication. Always keep it clear, concise and simple. Adopt the KISS method (keep it short and simple) both for text and tables.

➢ Understand the context in which he is communicating. There are differences between generations, technical abilities and knowledge of statistics.

➢ The various media must receive the information simultaneously.

WAYS OF COMMUNICATING YOUR MESSAGE EFFECTIVELY

Since we understand the importance of communicating data, we've defined our goal, and determined our target audience. There is need to *determine which methods to use to communicate your message* to your target audience. This is a critical step that can also make or break the entire communication project. There are four basic communication laws that will apply to any communication method, whether it is a fact sheet, a presentation, or even a personal phone call. These laws are:

➢ Write for your audience
➢ Make it visually appealing
➢ Make it readable
➢ Make it credible

One of the best ways to understand and communicate data is to visualize the numbers as picture. This makes it easier to see a pattern or expose patterns that might otherwise have been concealed. According to Friedman (2008) the main goal of data visualization is to communicate information clearly and effectively through graphical means. But one should be careful when using data visualization techniques, because poor visualization of statistical information can be misleading. There is a variety of conventional ways to visualize data – tables, histograms, pie charts and bar graphs are being used every day, in every project and on every possible occasion.

1. *Tables* are an arrangement of words, numbers, or signs, or combinations of them, in parallel columns, to exhibit a set of facts or relations in a definite, compact, and comprehensive form. There are basically two types of tables, *presentation/demonstration* tables (used to highlight key figures in a news release, web page or in a paper) and *reference* tables. In designing a table, you should make it easy for your audience to find and understand numbers within the tables. Also tables should be labeled in a straightforward and unobtrusive fashion, so that attention would be on the substantive points to be conveyed by your data, rather than on the structure of the table. A good table must have a *table title*, *column headers*, *row stubs, footnotes*, and *source*.

Money Market Rates (Per cent)					
WEIGHTED AVERAGE					
Month	MPR	Call Rate	OBB	NIBOR 7-days	NIBOR 30-days
Jan-11	6.0	4.10	2.46	6.93	12.84
Feb-11	6.0	2.17	2.20	7.70	11.27
Mar-11	6.0	1.50	1.31	5.55	7.85
Apr-11	6.0	1.27	1.11	2.46	5.13
May-11	6.0	4.94	4.45	6.16	8.03
Jun-11	6.0	2.73	2.19	3.63	5.95
Average 2011	6.0	2.79	2.29	5.41	8.51
Average 2010	9.85	15.02	7.59	15.97	17.15

Table title ← (points to Money Market Rates title)
Column headers ← (points to header row)
*Data* ← (points to data cells)
Row stubs ↑ (points to Month column)

When presenting a table, data values should be set out so key information(s) can be easily extracted, values should be right justified and should maintain the same decimal places (usually 1 or 2).

2. *Graphs* are effective visual tools because they present information quickly and easily. Most, data can be better understood when presented by a graph than by a table because the graph can reveal a trend or comparison. There are many different types of graphs that can be used to convey information: bar graphs, line graphs and pie charts. Knowing what type of graph to use with what type of information is crucial. Depending on the nature of the data some graphs might be more appropriate than others. Sometimes text or a data table can provide a better explanation to the readers, once the target audience is defined and the message to be transmitted is determined, the most appropriate graph can be selected.

   A bar graph compares values across categories or treatments. The x-axis gives the independent variable, while the y-axis depicts the values of the dependent variable. The important point to note about bar graphs is their bar length or height—the greater their length or height, the greater their value. They may be either horizontal or vertical. *Vertical bar graph* is used when comparing important data values. It displays data better than horizontal bar graphs. *Horizontal bar graph* is used when category names are too long to fit at the foot of a column. A bar graph compares values across categories. The x-axis gives the treatment values (independent variable), while the y-axis depicts the values of the dependent variable. The values of the bars can be raw data, totals or means. In drawing a bar chart, the vertical axis should not be compressed as it would give a good picture of the information you want to pass.


Share of Funds to the Manufacturing Sector (2007-2011)
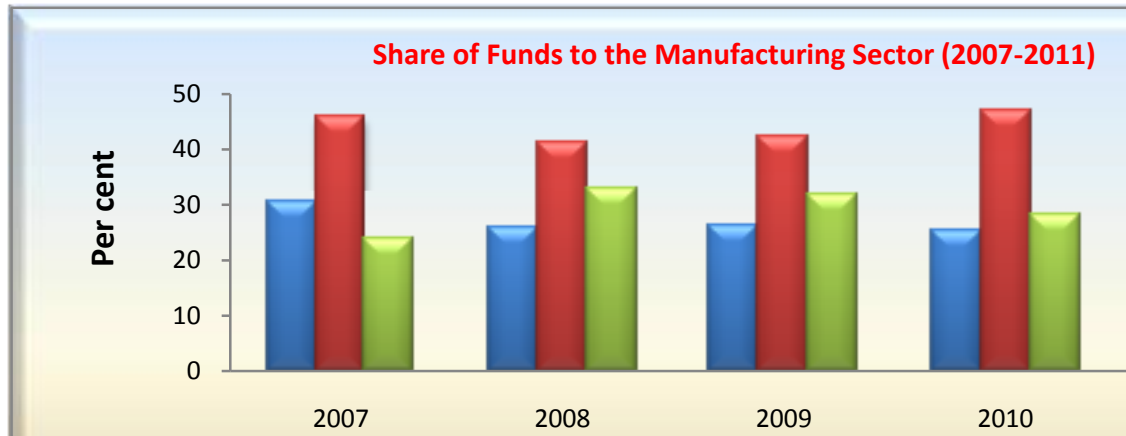
   A pie chart summarizes a set of categorical data (data considered as qualitative, that belongs to a category) or displays the different values of a given variable (e.g., percentage distribution). This type of chart is a circle divided into a series of segments; each segment represents a particular category. The pie chart is used for simple comparison of a small number of categories.

Money Market Asset Outstanding
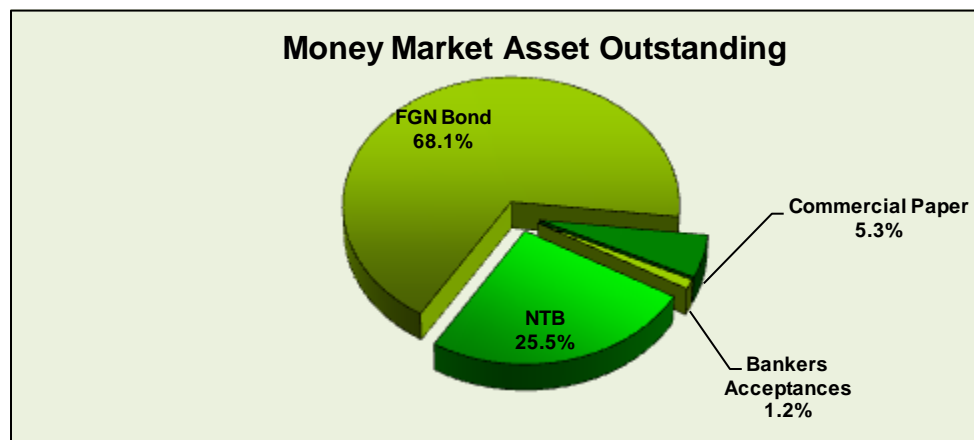
Source: CBN Annual Report

Values should be marked different, or differences may not be easily seen. Labeling sectors with their actual values overcomes this problem. In some cases, where data values are close to each other, a pie chart's message may be easily misunderstood. A column or horizontal bar chart may be more useful.

A *line graph* is a visual comparison of how two variables—shown on the x- and y-axes—are related or vary with each other. It shows related information by drawing a continuous line between all the points on a grid. The line graph is often viewed as a time series graph. Line graphs are more popular than all other graphs combined because their visual characteristics reveal data trends clearly and these graphs are easy to create. Line graphs, especially in the fields of statistics and science, are one of the most common tools used to present data. *Bar and Column graphs and line graphs share a similar purpose. The column graph, however, reveals a change in magnitude, whereas the line graph is used to show a change in direction.*
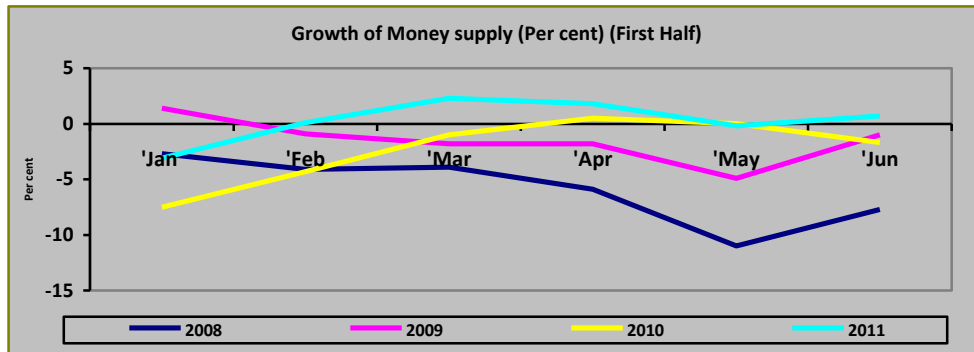

Source: CBN Annual Report

3. *Animations and videos* make it easier to tell stories by combining audio or textual descriptions with graphical illustrations to communicate the meaning behind the numbers. According to *Edward R. Tufte* (2001) "Graphic Excellence is that which gives to the viewer the greatest number of ideas in the shortest time with the least ink in the smallest place."

Hans Rosling, a professor of international Health at Karolinska Institue and a co-founder of Gapminder, has had great success with using animation to illustrate data, as a way of communicating statistics. He brings heavy and dreary statistics into life using a combination of animated graphics and equally animated presentations. He uses the Gapminder presentation tool to debunk various myths about the world economic development, disparities and how well (or poor) we share our planet resources.
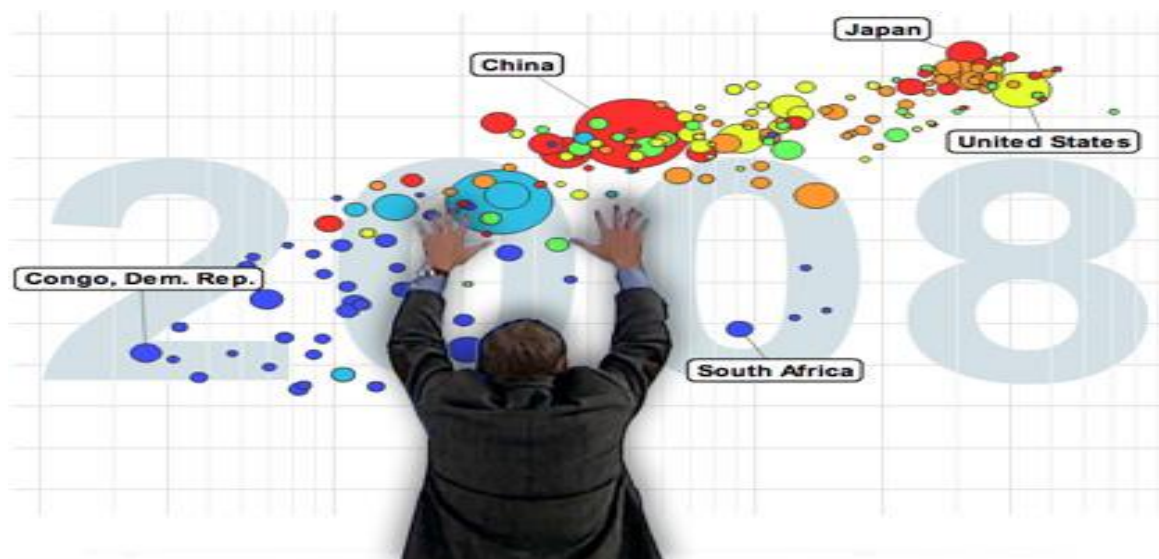
A population pyramid is a graph showing the age and sex distribution of a population. It is a useful tool in revealing information about a population's history and future possibilities. The animated population pyramid shows the change of population distribution over time.
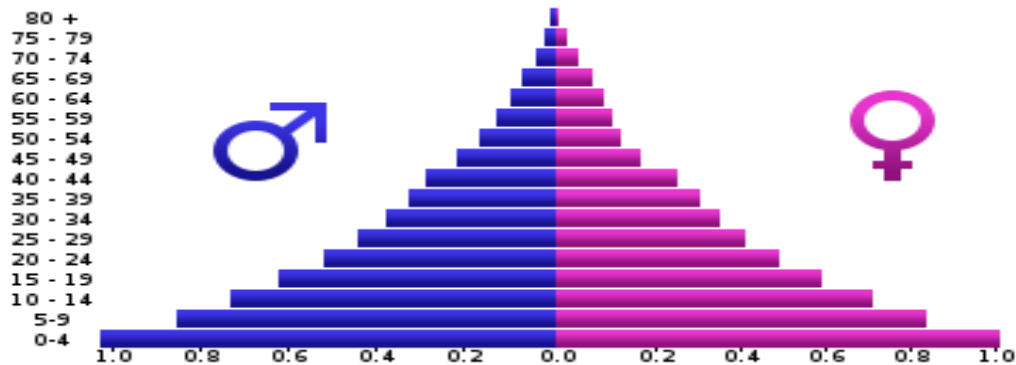
4. Maps are the most efficient tools to visualize spatial patterns. When carefully designed and presented, they are more than just decorative features in a statistical presentation. They can help people identify and highlight distributions and patterns that might not be apparent from tables and charts. There are lots of interactive mapping software which can help you to take advantage of geographic-related data, and to effectively visualize territory and business information by creating your own custom interactive maps. Interactive map making software usually supports custom definable regions, areas and location points.
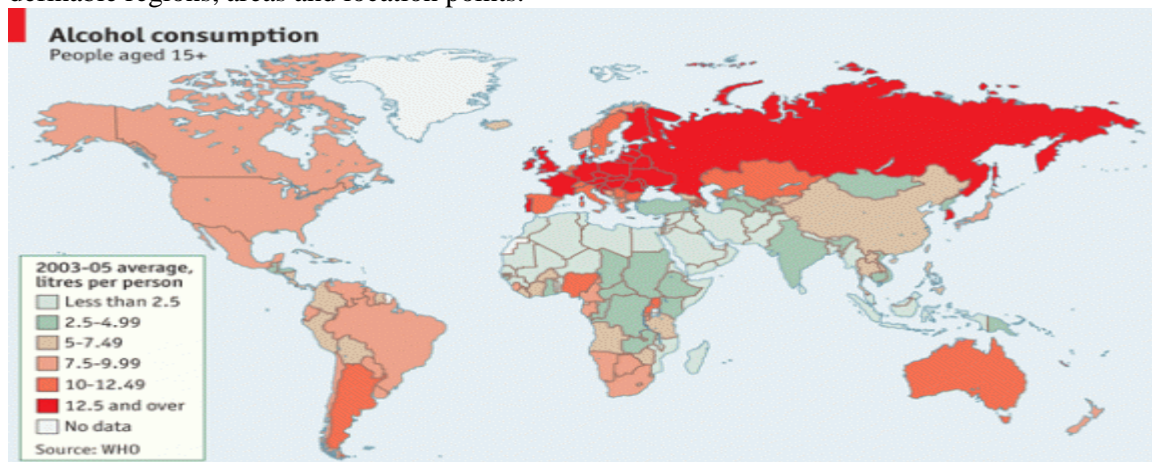
Users can select pre-designed flash map templates, and easily change color settings of countries or counties, and pinpoint locations on the map by using pushpin buttons or icons. As the main purpose of these maps are mostly for navigation or data representation purpose, geographical details such as highways, buildings, rivers are not always necessary, which makes the map cleaner and easier to navigate by visitors. Maps are very useful in preparation of censuses' and surveys and in the analysis and reporting of results. Generally there are two types of map: *general reference maps, thematic maps*.

Generally, different audience respond to different techniques, the table below can serve as a guide.

Audience	Text/Details	Data	Visuals
Practitioners and colleagues in your	Provide an executive summary and some	Use data with emphasis on practice and efficiency.	Use a lot of visuals. Convert text and data

field	other details of interest to the field.		into visuals to speed up readability.
Administrators, leaders or policy makers	Provide an executive summary only, with emphasis on conclusions and suggested actions	Use clear conclusive data, with emphasis on quality, money and outcomes.	Use a lot of visuals. Convert text and data into visuals to speed up readability
Researchers, academics, technicians, etc.	Provide good overview, including methods.	Provide sufficient data to make a clear argument.	Use sufficient visuals and charts that communicate your message.
Media, Public, Parents	Provide only a few facts; then focus on take-home messages	Use simple data with emphasis on gravity of the problem and take home messages. Translate data into real-world language.	Use a lot of visuals and pictures that communicate your message. Convert text and data into visuals to speed up readability.

Source: http://www.nedarc.org/tutorials/utilizingData/adoptGoodCommPrinciples/writeForYourAudience.html

CONCLUSION

Numbers tell your story, and so you need to be able to effectively communicate them to your audience. Remember that audience is the most important consideration in any communication, but it is the one we most often forget. We normally assume that they are just interested in our subject as we are, forgetting what the audience cares about and focusing on the wrong messages. There are just simple techniques for turning a boring old document into a visually stimulating one, which your audience might actually want to see or read. Some of the listed tips are important

- Break up Text: There's nothing worse than seeing tons of monotonous text
- Use Headings: A great way to break up long areas of text is to break up the different sections and paragraphs.
- Use different fonts to differentiate text in the document.
- Color is one of the greatest ways to add visual appeal to any document.
- Pictures can replace a thousand words, use them when necessary

The key is always to *keep it short and simple*.

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