Software Visualization Approach for Monitoring Election Trends In Nigeria

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ABSTRACT

The behaviour patterns of people are always difficult to measure and determine especially in elections. The main objectives of this study is to visualize the election trends in Nigeria. Also to determine the rates of voting in Nigeria over period of time. The C# (C – Sharp) is the chosen software used to develop graphical representation of voting patterns. With this, electorates can easily classify the voting pattern in Nigeria as regular or irregular and this will greatly assist the stakeholder in planning for the elections.

Keywords: Software, Visualization, Election Trends and Voting.

1. INTRODUCTION

The graphical representation of objects or events cannot be taken for granted because of the importance attached to them. In this study, software visualization is used to visualize the patterns of voting in the Nigerian election systems. Voting, along the different political parties always resulted to different voting patterns. Software visualization is the systematic and visual display of information in the form of the table, diagram and graphs according to Turfle, (2001). Also prince Bakur and Small, (1998), defines software visualization as the combination of utilizing diagram, graph, design and animation combined with technologies in human computer interaction to reach the ultimate goal of enhancing the study of software systems as well as effective use of these systems. This software visualization is used as a tool in order to analyse the pattern of voting system in Nigeria along the different political parties.

Political parties are important institutional component of liberal democracy and electoral process. Political parties produce the candidates, set the parameters of issues and agenda within which elections are to be fought and are furthermore expected to perform these duties from one election to another (International IDEA, 2000: 226-227). The growth of modern democratic practice centers around political parties, which standout as organized platform for the articulation of aspirations and canvassing for electoral votes. The idea of independent candidacy as practiced in some advance democracies, it remains strange in Nigeria as it has not been adopted. In the United States of America for instance, the citizenry appears to be divided along the traditions or political orientation of either being identified as Democratic or Republican. Also in Britain, it is Labour or Conservatives. Such political cleavages have grown and established themselves merely as a result of historical practice and emergence of little regulated political parties (Federal Ministry of Information and National orientation, 2001:62). The situation in Nigeria is however different. Nigerian political parties hardly lived long enough before they are terminated by the military or naturally go underground. Their history too showed that they were ethnic based, while at the same time suffered from ideological fluidity prevalent in Nigerian politics.

In a Plural and deeply divided society like Nigeria, the literature on federalism and democracy posit that the weapon for achieving unity and national integration is the requirement for existence of political parties that can achieve national spread, endure overtime and perform the function of national development (Adebayo, 2006 : 63-64). But where political parties are allowed to mushroom everywhere in a plural society, they may at best advance anarchy and limited local interest. One of the oldest definitions of political party was that given by Edmund Burke (1729-1797) cited in (Okwodu, 1982) as “a body of men, united, for promoting by their joint endeavors the national interest upon some particular principles in which they are all agreed”. This definition is based on principles (ideology), that is a party must exist to serve national and not some sectional interests. This
definition leaves out the main purpose of a party, which is capturing political power. Its weakness notwithstanding, it brought
greater contribution to the issue of party formation i.e the promotion of national interest. A political party according to Downs
Authority (1957) is “a team of men seeking to control the governing apparatus by gaining office in a duly constituted election”.

Modern political theorists appreciate the fact that for any association to be described as a political party it must have a clearly
defined ideology be it capitalism, socialism or welfarism. Perhaps this explains why Maclver (1964:396) views political party “as
an association organized in support of some principle or policy which by constitutional means it endeavors to make the
determinant of government” In short, political parties are associations that serve, both as interest and pressure groups performing
the important functions of recruitment of political actors, mobilization of the citizenry and provision of choice alternatives for the
populace organizing and campaigning for votes (Eghosa, 1982:50).

From 1999 to date, Nigeria witnessed the growth of an unprecedented number of political parties. Some of these parties merely
exist on paper and has no electoral value. They resort to political harlotry and support the dominant political party so as to be
given some positions after elections. During this period the dominant party was the People’s Democratic Party which controlled
the Federal Government before the March 28 2015 General Elections which broke the back-bone of the Peoples Democratic Party
(PDP) that ultimately led to the defeat of the incumbent president (Dr. Goodluck Ebele Jonathan) by the All Progressive
Congress (APC) candidate Gen. Muhammadu Buhari (Rtd).

2. MATERIALS AND METHOD
We used the election results conducted in Nigeria since 1999 which was made available through the Independent National
Electoral Commission (INEC) Report with emphasis on presidential election results. To analyse these results, a taxonomy was
developed according to Simon(1969) which was re-modified into the voting process. We developed the Taxonomy of
Visualization in hierarchical order and these include:

A: Scope
B: Content
C: Form
D: Method
E: Interaction
F: Documentation
G: Effectiveness

Simon (1969) said, “An early step towards understanding any set of phenomena is to develop taxonomy”.

In this study, the work of Benjamin (undated) on taxonomy was modified in order to illustrate PBS taxonomy, which consists of
seven phases namely: The simple illustration of Taxonomy of Visualization to represent election trends can be put in hierarchical
order as follows in figure 1.:

![Figure 1 : Taxonomy Visualization Block Diagram](attachment:image.png)
In relation to the block diagram given in figure 1 Above, each of the segment of the taxonomy visualization is given as follow:

**Scope**
In order to develop a meaningful taxonomy for the software visualization; the scope that the software visual need to be covered must be well defined as follow:

![Figure 2: Scope of Taxonomy](image)

![Figure 3: Content of Taxonomy](image)
Form
To give accurate representation of the voting patterns we need a meaningful form design as a template for the mode of representation of the result. The form for this taxonomy formation is as follow

![Diagram](image)

Figure 4: form of Taxonomy

Method

![Diagram](image)

Figure 5: Method of Taxonomy

C# (C-Sharp) is the chosen tool used in analyzing the software visualization techniques

Interaction
To generate the result that is going to be meaningful to the user of this software visualization taxonomy, we need to develop an interactive representation to assist us in order to interpret the result. In this study, series of bar chart combined with line graph in simple output are going to be developed and used as result are going to be used in the program in order to differentiate one output from the other.
Different colours were used in the program in order to make the interaction of the result more meaningful and to signify the progress in which green signify the winning party and red signify losses.

**Effectiveness**

![Diagram](image)

**Fig. 6: Interactive Representation**

**Fig. 7: Component Representation**
3. DISCUSSION OF RESULT

The result were generated with C# in order to accommodate the graphical representation which is the sole aim of this study. In this analysis, we try to figure out the performances of the current president of Nigeria in person of Muhammadu Buhari and the main rival political party which is People’s Democratic Party (PDP). With this comparative analysis which is in combination of bar chart and line graph, we are able to figure out the performances of Buhari and PDP since 2003 election. The various result were generated and discussed as follows:

![Figure 9: Comparism of performance of Buhari and PDP in election between 2003 and 2015.](image)

With respect to the figure given above, we are able to compare the performance of the PDP and Buhari as seen from 2003 election to 2015 election. The bar chart gave a summary view of the performance while the line graph show irregular pattern which compare the result obtained by Buhari and PDP in last twelve years. The line graph is irregular for both PDP and Buhari which signify that the number of people voting for a particular candidate are not constant and this signify the maturity and development in our democracy.
With respect to fig. 10 and fig. 11, it is seen that the winning difference is clear but cannot be revealed using the line graph in Fig. 11 because it has no years to compare it with.
With respect to fig. 12 and fig. 13, it is seen that the winning difference is clear but cannot be revealed using the line graph in fig. 13 because it has no years to compare it with.
Fig. 15: 2003-2015 Data

Fig. 16

Fig. 17
Fig. 18

Fig. 19

Fig. 20
4. CONCLUSION AND RECOMMENDATIONS

Based on the findings of our study, we concluded that the election patterns in Nigeria are very irregular in the sense that all the line graphs generated are not in straight form. We found out that the total victory of a particular candidate is based on party affiliation. Voters’ population in each election is around 13 percent of the total population and we found out that due to the economic hardship voters are facing, a lot of people are not interested in voting process. It is therefore recommended that the software that was developed can provide both the bar chart and line graph representation in a single window template to enable the summary analysis to be easily carried out for any election. This software is recommended for any election in Nigeria in order to get accurate summary results as well as graphical representation of same.
REFERENCES