Evaluate Electoral Violence in Nigeria using an Expert System.

Onyemelukwe Nnaemeka. C.[1]

Okeke Ogochukwu .C.[2]

Onyemelukwennaemeka@gmail.com

ogoookeke@yahoo.com

[1] School of Health Information Management, Nnamdi Azikiwe University Teaching Hospital Nnewi, P.M.B 5025, Nnewi.

E-mail Address: info@shimnauth.net, 08035404568.

[2] Computer Science Department, Chukwuemeka Odumegwu Ojukwu University Uli, Anambra State. Nigeria, (COOU)

ABSTRACT

This paper focused on the evaluation of electoral violence in the Anambra State Senatorial Election in Nigeria. Knowledge Base Engineering approach was used in the development, an inference of 840 electorate attributes were used over 3 periodic years. The FTA provides an in-depth overview.[10]. Analysis gotten determines what event of risk could occur as a result of electoral violence.

Keywords: Electoral Violence, Knowledge Base, Evaluation, Godfatherism, Analysis.

INTRODUCTION

The recent trend of electoral violence has been the same as significant events of the democratic process in Nigeria. The problem has continued to increase with its bad effect on the normalization process. This has constituted a sense of electoral malpractice, insecurity, electoral indifference, legitimacy calamity, and violent behavior in the political scene. Despite the recent consequences of electoral violence in Nigeria, methodical academic research is rather inadequate on the fundamental of election security. Using collection, this study, therefore, seeks to explore the link between electoral securities and determine factors in Nigeria's electoral violence. The investigation conducted on this study reveals that the threat to electoral security is a product of complex events of interactive factors facing various stages of the electoral process. [6] in their paper say that the overwhelming coercive approach to electoral security which is informed by the assumption that the principal threat to electoral security emanates from undesirable activities on Election Day is quite misleading and grossly insufficient to address electoral insecurity. [1]et-al.

The study focus on the analysis of electoral risk factors in 2011, 2015, and 2019 election capable of disrupting the peaceful conduct in the next election in Nigeria and what happens when a discrepancy is found, a faulty tree analysis method which will identify the potential cause of system failures before the failures actually occur more than one single points of failure (insurgents) in this process [5] and propose process assessment can then indicate these insurgents. The study will try and answers these questions; first, identify those factors that promote Godfather in Anambra Senatorial Zone in Nigerian and provides detailed records of the history based on electoral violence.

Statement of the Problems

1.   The effect of Godfatherism
2.   Re-occurrences of electoral violence

Aim and Objectives of the Study

The aim is to design and implement an expert system for electoral violence using faulty tree analysis.

Objectives are as follows

1.   To design a model that can rate electoral violence.
2.   To identify factors that promote Godfatherism by predicting using fault tree analysis report.

2.0   Reviews of Related Works

Muchlinski [9] point out the weaknesses of existing methodologies by stating, "many broad measures of electoral violence currently in use obscure the identity of the actors involved, gloss over the tactics employed, do not report on the nature of the violence itself, or otherwise provide indicators of electoral violence at quite high levels of aggregation and generality. Because of this lack of detailed data, important puzzles remain about the perpetrators, timing, causes, consequences, and nature of electoral violence" (2017:2). Burchard [4] make a similar argument in their analyses of methodological challenges in the measurement of electoral violence, and their recommendations for future research.

[2] In his article focuses on assessing the failings and strengths of electoral management bodies and election dispute resolution mechanism that contributes or militates against electoral governance in Africa. These issues are at the core of securing a transparent, free and fair election. They are also essential ingredients to African countries that are committed to respecting, promoting, and protecting the fundamental right to vote. Given the experience of electoral crises in some African countries like Gabon, Kenya, Nigeria, and Zimbabwe, and the threats they pose to democratic ambitions, it is important to explore available options for strengthening election institutions and mechanism for managing election-related violence and the impact of such options and their prospects for future

elections. It is the view of this article that electoral reforms in these areas could enable African states to strike a successful balance between democratic participation and governance. [2]

Based on [3]. Future research could usefully examine the relative effectiveness of a wider range of different types of EVP, as well as the relative success of different program implementers. It would also be of interest to consider the stage of the electoral cycle in which interventions were most effective at quelling conflict, as well as the electoral actors with whom it was most useful for EVP initiatives to engage (grassroots or high-level). And it would be of benefit to have greater insight into the causal mechanisms subtending the findings reported here. Future studies could also explore the effects observed here over a longer period; the stated aim of UNDP programming documents is to influence electoral conduct throughout the program and shortly thereafter, but it might also be hypothesized that certain effects of interventions also have long-term impacts years after the programs in question have finished. A further area of useful research would be the collection and analysis of the activities of a wider range of EVP providers. The study of EVP is still in its infancy, and much work remains to be done to fine-tune our understanding of the conditions under which concerted efforts to prevent and mitigate electoral violence are successful. This article has hopefully helped to lay the groundwork for future work in this emerging field. Seeberg [8] suggested that data to gain insight into processes of candidate nomination in parties that are often new or changing. He argues that variations in such processes could be a hitherto unexplored driver of nomination violence and should be a topic for future studies.

Research Gap

The research may have learned from experience or through a literature review that there is new electoral violence impending at the same time, electoral security requires more comprehensive measures than the deployment of security forces. The study of past incidents and patterns of electoral violence is vital for allocating anti-violence for electoral measures. Preventative measures are to identify early warning threat that while address the rumors concerning actual incidents of electoral violence is important for justifying potentials for violent reactions. Based on the research's initial review of related literature, we found out that no study has been conducted to determine the basic root problem on the topic

3.0 Propose System and Implementation

Develop an expert system that focused plans for providing security which evaluates and rates the electorate before the election. A knowledge-based methodology was used in the implantation.

Method of Data Collection

Qualitative methods are used to narrow down the root cause problem and quantitative methods to quantify the problem by way of generating numerical data. Analysis of standard fault trees is performed on the two levels: qualitative and quantitative level.
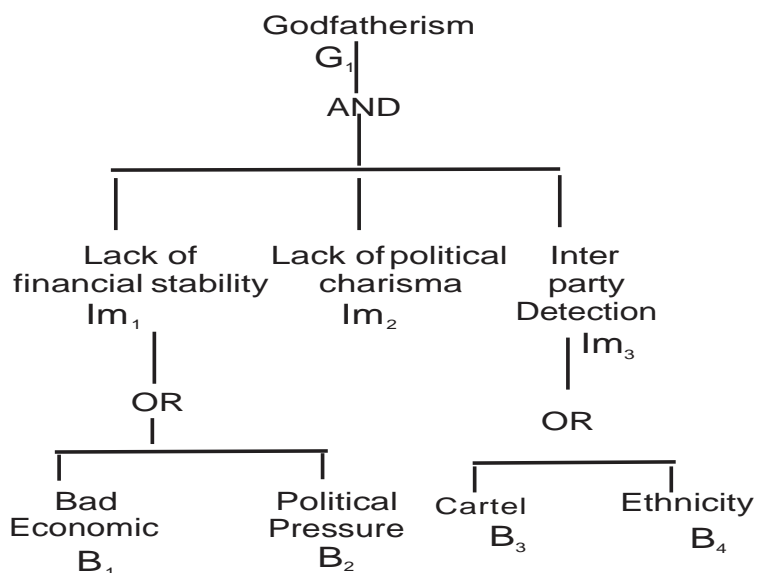
Figure1. Analysis for the Fault Tree Diagram

4.0 Result and Discussion

Based on a survey the first question, what determines the factor that promotes Godfather in Nigerian politics and the second one is the effect of Godfather towards election violence.

Table 2 Assessment /Rating

Electoral violence based on the history of the candidate

Electorate	Lack of Financial Stability Rating %	Lack of Political Charisma Rating %	Bad Economic Rating %	Cartel Rating %	Political pressure Rating %	Inter-Party Defection Rating %	Ethnicity Rating %	Total
Valuation 1	30	50	0	0	40	10	30	160
Valuation 2	40	20	10	0	50	20	30	170
Valuation 3	50	10	20	0	40	30	30	180
Valuation 4	20	10	30	50	20	40	30	200
Valuation 5	0	10	40	0	10	50	20	130
Highest Rate of Electoral Fraud	14	10	10	5	16	15	14	
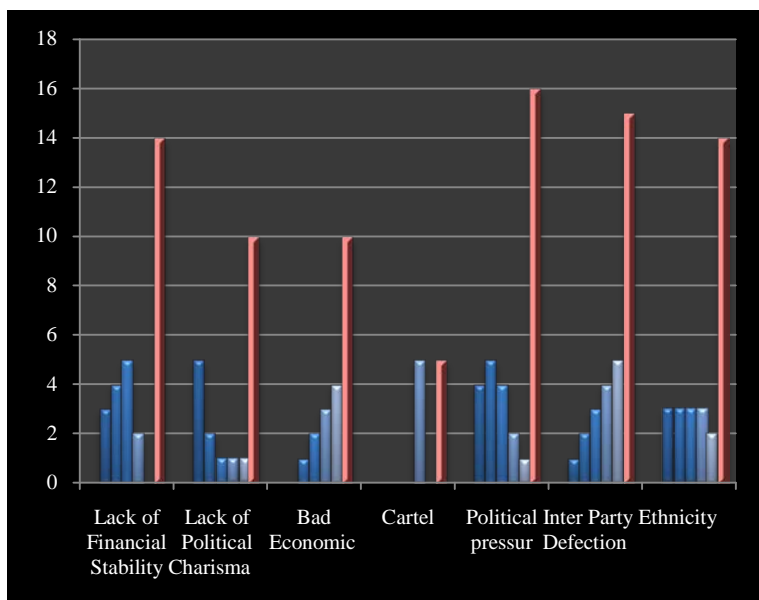
Figure 2. Record of the highest rating of electoral fraud in Red

As **Figure 2** shows, the political pressure indicated the highest rating on electoral fraud that cased by Godfathersim, but **Table** 3 shows the final minimum cut set definition by rule base.

Table 2. Initial Rule Definition

Initial Rule of FTA		
Event	**Gate**	**Descendants**
Top	**AND**	IM_1, IM_2, IM_3
G_1	**OR**	B_1, IM_2, IM_3
G_2	**OR**	B_2, IM_2, IM_3
G_3	**OR**	B_2, IM_2, B_4
G_4	**OR**	B_3, IM_2, B_1
G_5	**OR**	B_4, IM_2, B_1
G_6	**OR**	B_3, IM_2, B_2
G_7	**OR**	B_4, IM_2, B_2

The initial order of faulty tree rule. Key: G means a top event, IM means an intermediate event, and B means basic events.

Table 3. Final Order MCU

Identify the final order Minimal Cut Sets		
Event	**Gate**	**Descendants**
Top	AND	B_1, B_2, B_4
		B_1, B_2, B_4

Table.4. **Translating the above into Qualitative**

Identify the final order Minimal Cut Sets

Event	Gate	Descendants
Godfatherism	An event occurs only if all input conditions are met	Bad Economic, Desperation, Ethnicity
		Political Pressure, Desperation, Ethnicity

Translated table

Discussions

The Electoral Security Evaluation Machine (ESEM) design evaluates the electoral conflict and its root(basic) see Table 4 and Fig 2 show the result which will be integrated into the E-voting system report that will help to identify the potential cause of electoral fraud before the actual incidents occur. Once these security issued have been identified it will automatically improve the process model to increase the security measures of the electoral process against those uprising that seems the most likely to occur.

Conclusions

In this paper, we have presented an approach for continuous electoral security process assessment for assessing the electoral security violence of the election process in Anambra State Nigeria. Through the application of the Electoral Security Evaluation Machine design (ESEM), we automatically generate fault tree analysis, indicating different events in the process that could enable an undesirable risk to occur. We then use the fault trees to compute Minimal Cut Sets, combinations of events that could lead to the risk; we carefully consider a single point of failure (SPF) in line with the fault trees process model that identifies process changes that would remove the SPFs.

Limitations

It was observed that undesired events evaluated must be foreseen and all significant contributors to the failure must be anticipated.

Suggestion for Future Research

In the future, we plan to explore other ways in which to utilize the process model to identify potential improvements in the real-world process. For example, [10] highlighted that FTA focuses on identifying

different scenarios in the process that could lead to a pre-defined hazard occurring, but there is a complementary technique called threat tree analysis that we intend to pursue, which determines what kinds of risk could occur as a result of the incorrect analysis of a unexpected electoral security.

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