

CURBING CORRUPTION IN NIGERIA USING POLYA'S MODEL OF SOLVING PROBLEMS IN A MATHEMATICS CLASS

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ABSTRACT

This paper adopted an algorithm for fighting corruption by integrating Polya's problem solving model with 5 ways of reducing corruption as suggested by Transparency International. Concerted efforts were made in the paper to review relevant literature on Corruption in post-millennium -Nigeria and the place of Mathematics in addressing the menace of corruption. The review led to the conclusion that more efforts need to be put in place by the government to aggressively and methodically fight corruption in Nigeria. To do so, the polya model should be religiously applied using the 5 ways that government and citizens can make progress in the fight against corruption as identified by Transparency International.

Keywords: Corruption, Polya's Model, Mathematics

INTRODUCTION

Corruption is arguably one of the biggest challenges confronting Nigeria as a nation. It is an embodiment of dishonesty or fraudulent conduct by those in authority, typically involving bribery. According to Iyanda(2012), corruption is a common word used by both adults and children because it is found in every fragment of the Nigerian Society. It involves the embezzlement of public funds for personal use and any other act which is considered to be criminal according to the laws of the society.

Corruption is a reflection of institutional weakness, poor ethical standards, skewed incentives and insufficient enforcement of laws (Oye, 2013). He added that when a country is corrupt, her potentials to develop socially and attract foreign investments is diminished making it incapable of providing basic services and enforcing the right of her citizens. The menace of corruption has attracted the attention of the International community which is fighting tooth and nail to nip the

problem in the bud. The international community has made combating corruption a global priority in Sustainable Development Goals (SDG) 16, whose key element is to substantially reduce corruption and bribery in all forms (Cheyanne, 2016). While complete elimination of corruption may be quite difficult to achieve in Nigeria, much can be done to reduce the prevalence using mathematics as a tool to achieve the desired objective.

Mathematics is essential in all works of life and has continued to play a very important role economically and in other areas of national development. According to Odili(2006), the importance accorded to Mathematics in the school curriculum from the primary to the secondary levels of education reflect accurately the vital role played by the subject in contemporary society. Mathematics is capable of building positive characteristics in an individual through objectivity and rationality. In Mathematics, fair is fair, this notion and character of Mathematics makes it pertinent to note that if well taught and properly inculcated, Mathematics is capable of addressing the menace of corruption if a sizeable number of the populace is knowledgeable in it.

Review on highlights of corruption index of Nigeria from millennium to date

In the preceding years, Nigeria has been consistently ranked very high in corruption by Transparency International and other notable organizations that monitor corrupt practices around the world.

In the year 2000, Transparency International carried out a survey on the corruption levels of 90 countries and Nigeria occupied the 90th position, making her the most corrupt country in the world. By 2001, Nigeria was ranked the 2nd most corrupt country in the world falling behind Bangladesh. In 2002, Nigeria was again ranked the 2nd most corrupt country in the world. The trend continued until 2007 when Nigeria was ranked the 33rd most corrupt country in the world. This was the best ranking of Nigeria on the corruption index post millennium. This ranking was achieved probably because of the posture of President Umaru Musa Yar'adua against corruption and his reforms thereof. Thereafter, the ranking of Nigeria on the corruption level continued to be high despite improved legislation and counter efforts by successive governments to discourage corruption. This is an indication that corruption is deep rooted in Nigeria and it will take a more concerted effort, character and determination to dissipate it. According to Oyinola(2011), analysis of the anti-graft

or anti-corruption laws in Nigeria reviewed that corruption will continue in spite of the enforcement of the law because the perpetrators do not fear any consequences.

More recently, Nigeria is the 154th least corrupt nation out of 180 countries according to 2021 corruption index reported by Transparency International. The implication of this corruption ratings is that money meant for development are siphoned by few individuals and to some extent, the development of Nigeria is not guaranteed until the issue of corruption is tamed.

The place of Mathematics Education in attending to the menace of corruption

Mathematics Education is the act of teaching and learning of Mathematics along with associated scholarly research (Gbadeyan, 2015). Mathematics is a subject that promotes rationality, objectivity and truism. It is capable of inculcating the right values in an individual which would reflect in the society. For instance, the knowledge of logic and problem solving approach in Mathematics would develop in an individual the ability to make rational decisions, appreciate dignity of labour and also share responsibility for common goal of the society. Abari and Ijebu(2021) opined that Mathematics as a subject affects all aspects of human life at different levels. With this characteristics, Mathematics could be effectively used to address the problem of corruption in Nigeria. Mathematical approach to problems is universal and the answers are verifiable with conjectures and proofs. One of such approaches is the polya's model. For the purpose of this paper, polya's model of solving problems in a mathematics class will be integrated into the five ways of curbing corruption as suggested by Transparency International.

According to Transparency International (2016), there are five ways that citizens and governments can make progress in the fight against corruption. They include end to impunity, reform of public administration and finance management, promotion of transparency and access to information, empowering of citizens, and closing of international loopholes.

Utilization of polya's problem solving model in curbing corruption in Nigeria

In 1945, George Polya identified four basic principles in solving problems in a mathematics class. This principles have been effectively applied in other areas and have yielded the expected outcomes and it has continued to be relevant and acceptable today. This principles include;

- i. Understand the problem
- ii. Devise a plan
- iii. Carryout the plan
- iv. Look back

Integrating polya's model with the 5 ways of curbing corruption as suggested by Transparency International the solution could be;

i. Firstly, understand the Nigeria corruption problem

Problems may include;

- a. Mismanagement of common resources
- b. Weak institutions
- c. Marginalization
- d. Lack of accountability
- e. Nepotism or favoritism

ii. Secondly, devise a plan

Plan may include;

- a. Successful law enforcement
- b. Reforms focusing on improving financial management and strengthening the role of auditing agencies in government
- c. Press freedom and transparency/rights to information
- d. Strengthening citizens demand for anti-corruption and empowering them to hold government accountable
- e. Finding ways to stop financial institutions/individuals and cooperating offshore financial centers from absorbing illicit flows of money.

iii. Thirdly, Carry out the plan

Carrying out the plan may include;

- a. Appointment of capable people with anti-corruption antecedents to head law enforcement agencies and encourage legislation of anti-corruption laws

- b. Initiating reforms focusing on improving financial management
- c. Activating the process of ensuring press freedom and transparency/rights to information
- d. Putting in place the process of strengthening citizens demand for anti-corruption and empowering them to hold government accountable
- e. Initiating ways to stop money laundering
- f. Ensuring that relevant agencies of government initiate and implement aggressive anti-corruption campaigns

iv. Finally, look back

Options may include;

- a. Overhaul of the plans and implementation in the quest to make amends where necessary until the desired outcome is achieved. This could be attained by initiating and implementing institutional self-monitoring mechanisms at the instant of each plan on the Polya's model.

Conclusion

Corruption is a scourge of society today and it causes great harm to the development of Nigeria. As a consequence, resources are mismanaged, institutions of government are weakened and the gap between the few rich and the many poor has continued to widen. Over time, the place of Nigeria on the ranking of corrupt nations in the world has continued to increase and the living standard of citizens has continued to depreciate despite the numerous resources available in Nigeria. This situation has caused great concern not only to Nigeria but also to the international community. In the quest of proffering the needed solution, Transparency International has outlined five ways of addressing the corruption menace and this paper has integrated this ways in polya's model of problem solving as an algorithm to achieve the desired outcome.

Recommendations

The following recommendations are made based on the different views in this paper;

- i. The government should pay serious attention to the five ways of making progress in the fight against corruption as suggested by Transparency International and polya's model should be used to put the plan into action.
- ii. Successive governments should consolidate on the gains of the fight against corruption.
- iii. The electorates should seriously support candidates for elective positions based on their anti-corruption antecedents.

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