THE MULTIFARIOUSNESS OF OPERATIONS RESEARCH IN SOLVING COMPLEX NATIONAL PROBLEMS

(A TACTICAL APPROACH TO INSURGENCY IN NIGERIA)

Oloruntuyi, Ayodeji Ojo & Nwalozie, Solomon Chidi (2016)

Department of Economics, School of Management Technology, Federal University of Technology, Akure, Ondo State, Nigeria. Email: aoloruntuyi@yahoo.com solomytes@yahoo.com +234806860895, +2348062384836.

ABSTRACT

Operations research has aided in divers capacity the decision making process of military and non-military operations in war times across the globe but not much has been recorded in the application O.R. model to socio-economic problem like Insurgency. This study aimed at minimizing insurgency objective function $z = x_i + x_j$ by reducing the average number of successful attacks and death resulting from insurgency. The model simplifies the mathematical symbolization of the social violence by considering the rate of occurrence of the incidents as a determinant of the rate of victimization/death. Findings reveal that there is inverse relationship between insurgency 'z' and solution factor 'f'. That is as the decision variables are rightly implemented or channeled in the appropriate direction, the number of attack of the insurgents and the average number of victims reduces simultaneously. In conclusion the strategic application of O.R. would eradicate insurgency in Nigeria.

Keywords: National Problems, Insurgency, Tactics, Nigeria

1.0 INTRODUCTION

1.1 Background to the Study

The advent of Operations Research in 1938 when scientist and serving military officer combined effort towards the achievement of common goal-solving complex war problems is of good reckoning when the term "Operations Research" was coined out as a new branch of Applied Science (Larnder, 1979 pg 471). Operations research has aided in divers capacity the decision making process of military and non-military operations in war times across the globe. As defined by various scholars, Operations Research is concerned with the use of scientific approaches to solving complex problems. These problems are mainly decision problems that require a deductive or an inductive judgment. Most times, the decision maker is face with alternatives and is hereby required to make an optimum used of the best alternative especially when the outcomes affect a nation or large number of people.

Nigeria as an emerging nation from 1960 has faced many challenging issues ranging from post-colonial uncertainties: ethnic bias, socio-economic complex, political rivalry and religious crisis as a result of the forceful amalgamation of disparate regions in 1914 by the then British colonial master. This amalgamation is the foundation of divergent and diffused nature of interest in Nigeria as individuals embrace tribalism before national interest and placed gain before pain in their pursuits in life. These problems are what metamorphous into corruption, insecurity and economic paralyses in this modern day Nigeria. Having known that Insurgency originate from complex background other than just Islamic jihadist it is then of great importance

to address insurgency tactically using operations research techniques especially as Insurgents not only rebel against the nation but also have been terrors to human lives and properties in Nigeria.

In light of the above point, the Nigeria government and the Nigerian Armed Forces are tasked with winning the war against insurgency in the country either by Force or by dialogue. The application of operations research to achieve military objectives is therefore cogent in tackling insurgency in providing a comprehensive definition of the problem of insurgency in Nigeria, formulating and implementation models, to provide visible solution to the problem. This is achievable by recognizing the multiple arm of operations analysis considering the various faces of the study of operations research like the engineering, information technology, management science, psychology, sociology and political science.

1.2 Identifying Sources and Types of the Insurgency Problem in Nigeria

Insurgency in Nigeria emerged in two dimensions resource-based and sectarian insurgency (Odomovo, 2014). The Niger Delta resource-based insurgency escalated in 1998 basically as a struggle for ethnic nationality and resource control right which led to a take it by force strategy; as the militia activities were characterized by hostage taking, bombing of oil facilities and kidnapping for ransoms (Chiluwa 2011 in Odomovo 2014, pg 48). The Several bloody military offences lunched against the Niger-Delta militants and the latter presidential Amnesty Programme for the then willingly surrendering militants were government strategies to win the battle against insurgency in the Niger-Delta since 2009.

The Sectarian Insurgency initiated by the *Jama'atu Ahlis Sunna Lidda'awati Wal-Jihadl* group or Boko Haram sect that started in the 2002 but grew wield after an encounter with the joint task force 'Operation Flush' in 2009 posed present insurgence challenge to the Nigerian government (see Odomovo 2014 pg 46-49). According to Montclos (2014) Boko Haram has been variously described as a radical religious sect, a violent insurgency, a terrorist organization, a network of criminal gangs, a political tool and a cult. The logo of the group is the Quran; The Holy Quran is drawn between two machine guns and on top of each machine gun, and there is a banner that reads "There is only one God and Mohammed is His Prophet". It signifies that the implementation of the religion can be achieved only through the Holy Book of the Quran and weapons (Liolio, 2013).

The primary objective of this study is to constitute the Operations Research model that addresses the insurgency problem and create a clear picture of the relevant resolution variables. In solving insurgency as a national problem, the interplay amongst the various stakeholders is essential. The Judiciary, the Legislative, the executive and the ministry of defense need to work in harmony and fight with one voice to avert the danger of the insurgents.

1.3   Problem Definition

Several Strategies implemented by the Nigeria government and the defense ministry has had little or no significant effect in putting a permanent stop to the Boko Haran insurgency in the country. Aghedo and Osumah (2012) indicate that Boko Haram is a corollary of economic inequality, poverty, and radical ideology. They also noted that Boko Haram's successful

operations have been influenced by the influx of arms and illegal aliens through the country's porous borders, the low capacity of Nigeria's security forces, and the heavy-handed approach of same security forces. And several studies have agreed that there is obvious evidence to suggest that socio-economic disparities and ineffective prosecution of Boko Haram suspects have complicated the government's efforts.

1.4   Objective of the Study

The main objective in this study is to incapacitate insurgency by reducing the number of successful attack of the Boko Haram Insurgents and reducing the number of victim/death of Insurgency.

Objective function

Let

x_i= average number of incidents of Boko Haram attack

x_j= average number of victims/death associated with the attack

Where i, j = 1, 2, 3, 4 ….n

Therefore insurgency z = x_i+ x_j

Objective function

$$\text{Minimize } Z = x_i + x_j$$

Subject to:

Stating the decision variables and decision makers:

Government

i = Grant Amnesty to Boko Haram Insurgents

ii = Buy Ammunitions to combat Boko Haram

iii = Produce Ammunition Locally for National Defense

iv = Negotiate cease-fire deal with Boko Haram

v = Seek Foreign Military support

vi = Trade-off Boko Haram prisoners with chibok girls

Ministry of Defense

vii = Recruit, train and disburse more grand soldiers to combat Boko Haram in the North

viii = Use Air strike to win the battle against Boko Haram

1.5   Scope of the Study

The study on the multifariousness of operations research in solving national problems focused on minimizing the average number of victim of the Boko Haram insurgents and the average number of successful attack of the insurgents from 2009 to 2014. The study observed a need for synergy amongst the various arm of the government in combating insurgency as a war

and a social problem. Therefore the study is limited to the supposed decision variables that the judicial and legislative arm of government must choose from enhance the performance of the defense-joint task force.

2.0   LITERATURE REVIEW

2.1   Introduction

The scholarly review of related literature in the study was centered at the arguments of authors on the various suggested approaches to solving the insurgency problem in Nigeria.

2.2   Scholars Opinions on Granting Amnesty to Boko Haram Insurgents

Liolio, (2013) suggested amnesty should be given for Boko Haram members provided there are willingness and readiness of Boko Haram members to surrender their arms, unconditionally renounce terrorism and sign an undertaking to this effect. In return, the Nigerian government must pledge its commitment to institute and adhere strictly to programs that would assist their disarmament, demobilization, rehabilitation as well as reintegration. To foster this argument the government should develop infrastructure and create employment to reduce poverty, increase literacy, and re-engineer socio-economic change and also encourage foreign investment in labour-intensive industries such as manufacturing and agro-industry to create additional employment opportunities in vulnerable urban and rural areas of the Northern Nigeria. (Udounwa, 2013).

2.3 Buy Ammunitions to Combat Boko Haram

One of the recommendations of Udounwa in the year 2013 was that the Nigerian government should Purchase reconnaissance drones from foreign supplier countries to help monitor the border at lower cost; the suggestion agreed with some of the five rules of vanCreveld for defeating insurgency. These five rules are listed as stated follow:

2.3.1 There are situations in which cruelty is necessary, and refusing to apply necessary cruelty is a betrayal of the people who put you into power. When pressed to cruelty, never threaten your opponent but disguise your intention and feign weakness until you strike.

2.3.2 Once you decide to strike, it is better to kill too many than not enough. If another strike is needed, it reduces the impact of the first strike. Repeated strikes will also endanger the morale of the counterinsurgent troops; soldiers forced to commit repeated atrocities will likely begin to resort to alcohol or drugs to force themselves to carry out orders and will inevitably lose their military edge, eventually turning into a danger to their commanders.

2.3.3 Act as soon as possible. More lives will be saved by decisive action early, than by prolonging the insurgency. The longer you wait, the more inured the population will be to bloodshed, and the more barbaric your action will have to be to make an impression.

2.3.4 Strike openly. Do not apologize, make excuses about "collateral damage", express regret, or promise investigations. Afterwards, make sure that as many people as possible know of your strike; media is useful for this purpose, but be careful not to let them interview survivors and arouse sympathy.

2.3.5 Do not command the strike yourself, in case it doesn't work for some reason and you need to disown your commander and try another strategy. If it does work, present your commander to the world, explain what you have done and make certain that everyone understands that you are ready to strike again (vanCreveld, 2008: 241-245 in Liolio 2013:56).

2.4   Produce Ammunition Locally For National Defense

The criminal justice system and the military operation act need quick reform to speedily prosecute arrested members of the Boko Haram sect and other groups and dispense justice in a timely and fair manner as suggested by Udounwa, (2013). Many researchers also noted that the military had not anticipated the insurgency and was not prepared for its bombing campaign, as the late National Security Adviser Owoeye Azazi admitted in August 2011.18. Over the last two years, the government has sought to improve the capacities of the military and security services to respond to the challenge, particularly by improving training, equipment and coordination. More emphasis has been placed on retraining personnel in urban warfare, counter-terrorism and counter-insurgency. Personnel management and training is also prioritized, as well as equipment for close quarter combat, intelligence and amphibious operations, demolition and explosive breaching, tactical communication and civil-military relations (Crisis Group Africa Report N°216, 3 April 2014).

2.5   Negotiating a Cease-Fire Deal with Boko Haram

The Goodluck administration established a committee to negotiate a settlement with Boko Haram leadership, with little or no success in May 2013. Some scholars believes that insurgency in a way signifies the failure of the government in properly managing the socio-economic and political stance of the country; which degenerated to poverty, crime and moral decay. Therefore, government should Begin to tackle the root causes of growing radical Islamic and ethnic militancy by fully developing and implementing a Far North Development Commission, similar to the Niger Delta Development Commission, with a mandate that includes coordinating anti-desertification campaigns, developing large-scale irrigation, agriculture, power and road projects and promoting small businesses that could create jobs for youths; and do so in a transparent, consultative and accountable manner; (Crisis Group Africa Report N°216, 3 April 2014).

2.6 Seeking Foreign Military Support

Many scholars support the motion on seeking foreign military intelligent support for the Nigerian army on the best tactical approach to combat Boko Haram insurgents. Udounwa, (2013) suggested the Nigeria Arm Forces should request additional training vacancies in U.S. senior service colleges, especially the USAWC, to provide a global threat perspective to Nigerian officers dealing with counterterrorism issues. Solicit help from countries with experience in counter terrorism, such as the United States, for training and assistance with intelligence-gathering capabilities and equipment. Activate joint border patrols with neighboring countries particularly along the 1500-kilometer border with the Republic of Niger to control influx of arms

and prevent Boko Haram and other groups from linking up with violent extremist groups in the Sahel region such as AQIM. Udounwa, (2013)

2.7   Trade-Off Boko Haram Prisoners with Chibok Girls

Since the effort made by the former president Olusegun Obasanjo to negociate with Boko Haram insurgents on the adoption of the chibok girls in 2014 has gain no support from the then President Goodluck Jonathan; No much suggestion for a trade-off deal except for some side comments of local commentator and the bring back our girls campaign group(s). Rather, authors opine that government should enhance prison security to prevent the escape of suspected and convicted Boko Haram members and other criminals; Udounwa, (2013). And that the government must function in accordance with the law maintaining the moral high ground is essential in order to maintain the support of its populace or allies which applies to all activities like detention and military operations (Robert (1966) in Liolio, (2013).

2.8   Recruit, Train And Disburse More Grand Soldiers to Combat Boko Haram in the North

To Facilitate closer cooperation between domestic security agencies and other stakeholders to enhance intelligence sharing, integration, joint conduct of operations and policy coordination as suggested in the work of Udounwa, (2013) the government need to modify the mode of operations of the domestic security forces to be more people-friendly so as to win the confidence of the people and enlist citizen support against Boko Haram and other groups by adopting a

community-centric strategy aimed at denying Boko Haram members safe bases to plan and stage attacks, Udounwa, (2013). Then recruitment of new soldiers by the government and some private local community security organizations will have significant impact on the insurgents. But before that government need rise to the challenge of reducing poverty, creating employment, developing infrastructure, and increasing literacy in the country, especially in the north where Boko Haram recruiters have access to the mass of jobless youth Udounwa, (2013).

2.9   Use Air Strike to Win the Battle against Boko Haram

In May 2013, President Goodluck Jonathan declared state of emergency in Borno, Yobe and Adamawa states and deployed additional troops that with the help of vigilantes drive Boko Haram from most cities and towns. This pushed the insurgents to a corner at the Sambisa forest where the battle against insurgency could have been won through air strike in latter end of 2014. But due to diversion of national interest to political interest for re-election in 2015 the government lost the chance (Crisis Group Africa Report, 2014).

3.0   METHODOLOGY

3.1   Operations Research Method

The fundamentals of Operations research in analyzing and solving problems are basically quantitative research approaches. O.R. makes use of models to represent, predict and solve complex real life problems by first identifying the problem to be solved, defining the problem(s) relatively to its organizational settings or the gap in literature; then determine the decision variables upon which inductive or deductive judgments are to be made. The iconic model of the

system built is then subjected to mathematical or heuristic solution and validation before final implementation into the real world. In this paper, insurgency was modeled in numerical terms as a function of average numbers of successful incidents of attacks of Boko Haram and average number of victims/death recorded. The aim of the objective function designed in this study is to incapacitate insurgency by reducing the number of successful attack of the Boko Haram Insurgents and reducing the number of victims/death recorded due to Insurgency.

3.2   Data Collection

The available records on the incidences of the Boko Haram insurgents were collated for analysis as secondary data as shown in table 3.2.1. Besides for the sake of reliability of this study and in other to measure the possible effect of the decision alternatives suggested by the study, an eight items questionnaire was sampled in the University of Lagos, Akoka. The total number of 120 valid questionnaires represents the opinion of 120 respondents that were chosen by convenience. The objective function can therefore be minimized subject to the decision variables transformed to decision questions in the questionnaire by the researcher.

3.2.1   Record of Boko Haram Incidents

N = 6 years	2009	2010	2011	2012	2013	2014	Averages
Total Incidents	23	31	136	151	237	335	152
Total Number of Victims	118	1561	928	1519+	1103	10,849	2291

Total number of Successful prosecution	Nil	Nil	1	Nil	Nil	Nil	1
Total Number of Affected States	2	7	11	14	7	10	8

Sources: Forest, 2012; wikipedea.com; U.S. Department of State Country Report on Terrorism 2014;

3.3 Model Formulation

$$\text{Minimize } Z = x_i + x_j$$

From data collated it is evident that:

i. average number of incidents in six years $= 152$

ii. average number of victims in six years $= 2291$

Therefore:

Rate of victimization/death (k) $= \dfrac{\text{Average Number of Victim}}{\text{Average number of Incidents}}$

$$= \frac{2291}{152}$$

$$= 15 \text{ persons}$$

Note: On the average, one insurgent's attack affects/produces 15victims/death

Introduce constant 'k' as rate of victimization/death into the objective function

$$k = \frac{x_j}{x_i}$$

Therefore:

$$z = \quad x_i + kx_i \dots\dots\dots\dots\dots\dots\text{eqn (i)}$$

or

$$z = \quad \frac{x_i + x_j}{k} \dots\dots\dots\dots\dots\dots \text{ eqn (ii)}$$

3.4   Model solution

The model simplifies the mathematical symbolization of the social violence of the Boko Haram Insurgency by considering the rate of occurrence of the incident of insurgency in Nigeria as a determinant of the rate of victimization/death that occurs due to insurgency. To solve the model the constraints that affect the outcomes of the insurgency are the actions or in-action of the executive, legislative and judiciary arms of government as well as the strategic move of the military in combating the insurgents.

Quantifying the resultant effects of the actions of the government and the defense ministry for the purpose of this analysis was subjective and dependent on the outcomes of the decision alternatives. In this study, the decision variables were transformed to subjective Likert scaled questions of eight items measuring eight alternative causes of actions that could resolve insurgency. A pilot survey of the questionnaire was carried out to test the validity of the acclaimed construct using 120 sample respondent from the University of Lagos. The sample selection was done based on convenience and the reliability could be determined in consequent studies.

3.5   Model Validation and Output Analysis

To validate the model; One-way Analysis of variance (ANOVA) of the decision variables by sum of the Variables as measures of fighting insurgency was calculated and presented in the table below:

ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
Grant Amnesty	Between Groups	336.667	10	33.667	183.483	.000
	Within Groups	20.000	109	.183		
	Total	356.667	119			
Buy Ammunitions	Between Groups	222.500	10	22.250	.	.
	Within Groups	.000	109	.000		
	Total	222.500	119			
Produce Ammunition	Between Groups	201.667	10	20.167	48.848	.000
	Within Groups	45.000	109	.413		
	Total	246.667	119			
Negotiate cease-fire deal	Between Groups	321.667	10	32.167	701.233	.000
	Within Groups	5.000	109	.046		
	Total	326.667	119			
Seek Foreign Military support	Between Groups	316.667	10	31.667	172.583	.000
	Within Groups	20.000	109	.183		
	Total	336.667	119			
Trade-off Boko Haram prisoners for chibok girls	Between Groups	301.667	10	30.167	657.633	.000
	Within Groups	5.000	109	.046		
	Total	306.667	119			
Recruit, train and disburse more grand soldiers	Between Groups	201.667	10	20.167	439.633	.000
	Within Groups	5.000	109	.046		
	Total	206.667	119			
Use Air strike to win the battle	Between Groups	226.667	10	22.667	123.533	.000
	Within Groups	20.000	109	.183		
	Total	246.667	119			

From the table the f-test result has an inverse relationship with the insurgency z, i.e. as suggested by the respondent, the study therefore assumed that as the measures are implemented the average number of insurgents attack and the average number of victims/death will reduce systematically.

$$f \ \alpha \ \frac{1}{z}$$

Introduce constant 'k'

$$f = \frac{k}{z}$$
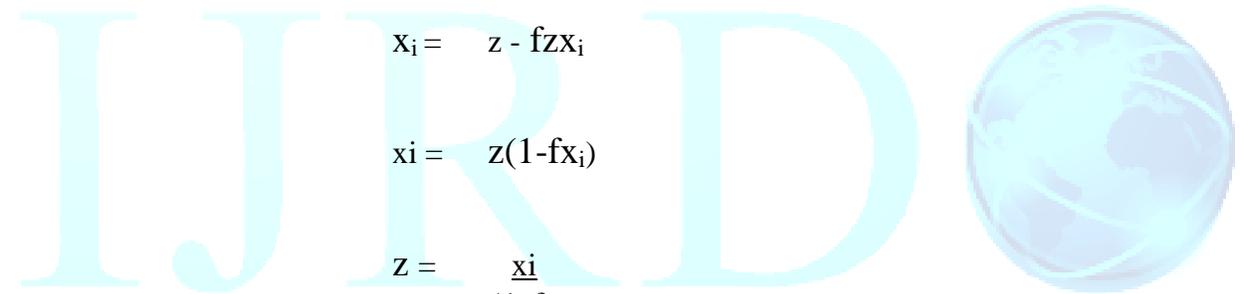
$$k = fz \dots\dots\dots\dots\dots\text{eqn (iii)}$$

Substituting for k in equation (i)

$$z = x_i + fzx_i$$

$$x_i = z - fzx_i$$

$$xi = z(1-fx_i)$$

$$z = \frac{xi}{(1-fx_i)}$$

When there are combination of strategies that has resultant effects on the value of z,

$$F_i = f_1+f_2+f_3+f_{4\dots} \ F_n$$

Therefore:
$$Z = \frac{xi}{(1-F_ix_i)}$$

4.0   RESULT AND DISCUSSION

4.1 Model Implementation and Monitoring

To reduce the number of successful attack of insurgents to 1 attempt per year,

i.e. $x_i = 1$, $x_j = k = 15$ (see 3.3)

$$Z = \frac{1}{(1-F_i)}$$

$$F = 1 - \frac{1}{Z}$$

$$F_n = 1 - \frac{1}{16}$$

$$= 1 - 0.0625$$

$$= 0.9375$$

The value of F_n that will reduce x_i to one incident per year and x_j 15 victim/death per year is
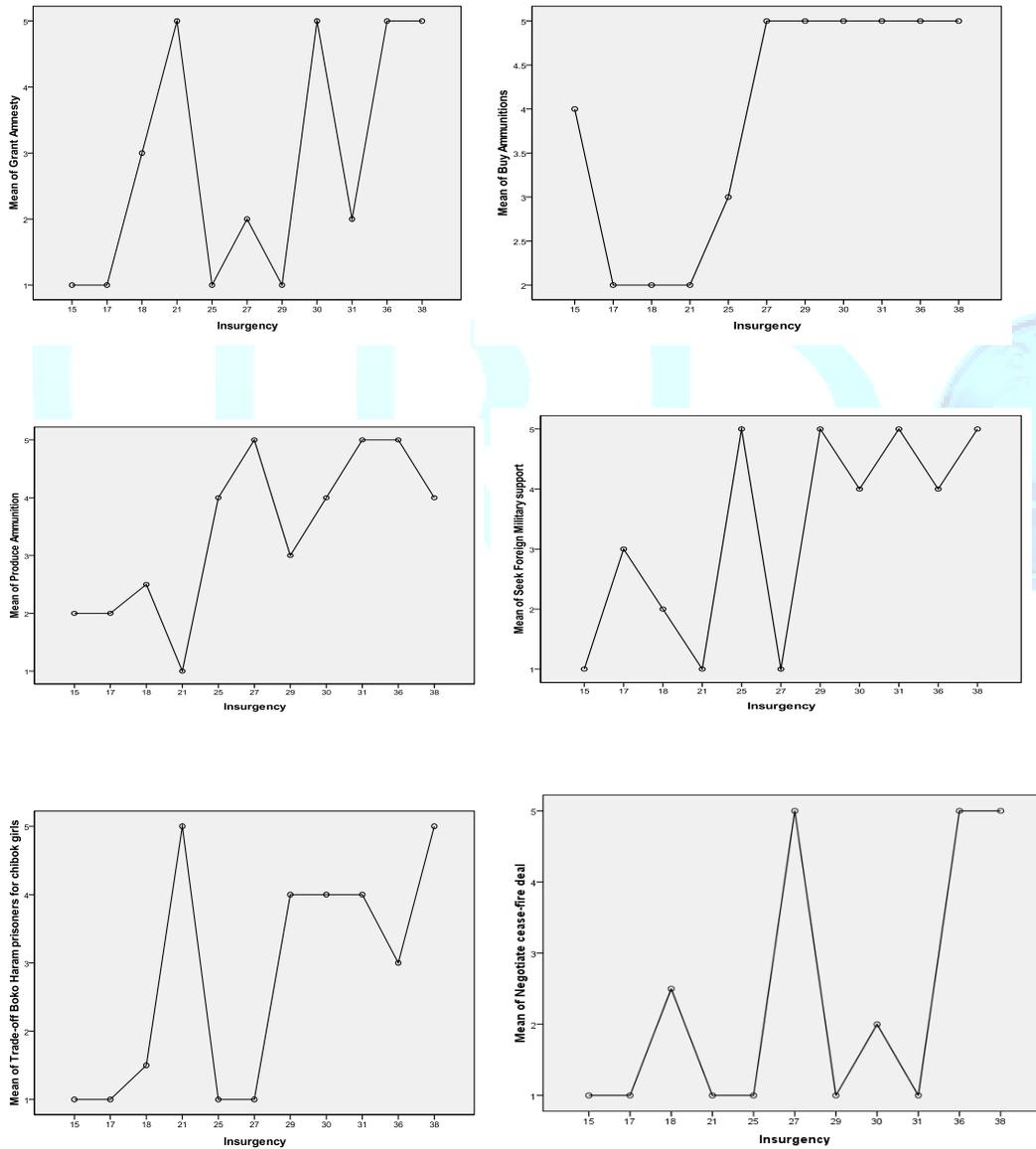
0.9375

Table 4.1

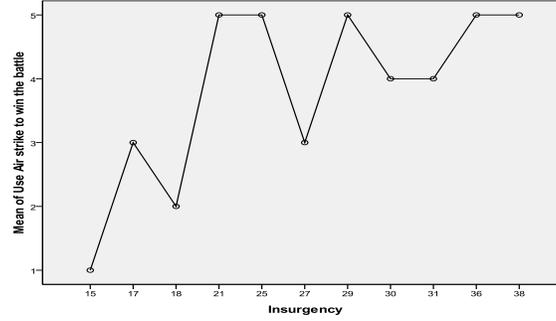| f_1	f_2	f_3	f_4	f_5	f_6	f_7	f_8	F_n
I83.483	0	48.848	701.233	172.583	657.633	439.633	123.533	2326.946
0.183483	0	0.048848	0.701233	0.172583	0.657633	0.439633	0.123533	2.326946

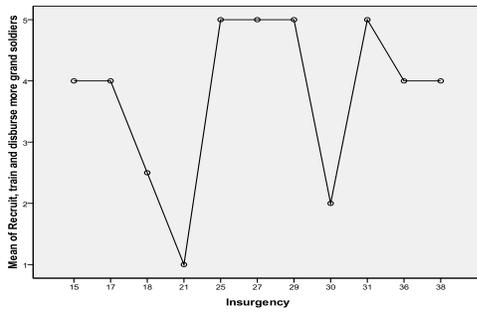From the pilot survey the value of F_n according to the sampled opinions is 2.3269 which is

higher than 0.9375 that would be required to reduce x_i to one incident per year and x_j 15

victim/death per year. Therefore a selective combination of the suggested tactics could definitely become a winning strategy for the government.

4.2   Comparing the Means of the Sampled Decision Variables

5.0   CONCLUSIONS

5.1   Conclusion

This study concludes that the application of operations research approach to strategically combine different tactics will provide lasting solution to the current high level of insurgency in Nigeria. Because there is an inverse relationship between insurgency 'z' and solution factor 'f'. That is as the decision variables are rightly implemented or channeled in the appropriate direction, the number of attack of the insurgents and the average number of victims reduce simultaneously. The minimization of the objective function $z = x_i + x_j$ subject to the decision variables will drastically reduce the chances of the insurgents to attack in the Northern Nigeria.

5.2   Recommendations

The study recommends that the Nigerian government should apply operational and tactical means to fight insurgency by reviewing its present strategy to use both peace talk and force. Recruiting, training and disbursing more grand soldiers to combat Boko Haram in the North and also the air-force should continue the use of Air strike to further weaken the strength

of the insurgents. Though negotiation for a cease-fire deal with Boko Haram is no more ideal when the military is ahead of the insurgents but the government in its wisdom may grant Amnesty to Boko Haram member that willingly surrender. Foreign Military support against Insurgents should purely be in the area of intelligence and information technology. Finally, Nigeria should discontinue the usual reliance on foreign means in the supply of ammunitions and take quick actions towards the President Mohammed Buhari desire to produce ammunition locally for National defense.

REFERENCES

Alao, D.O., Atere C.O. and Alao, O. (2012). Boko-Haram Insurgence in Nigeria: The Challenges and Lessons. *Singaporean Journal of Business Economics, and Management Studies* 1(4).

Aghedo, I. & Osumah, O. (2012). The Boko Haram Uprising: How Should Nigeria Respond. *Third World Quarterly,* 33(5), 859.

Crisis Group Africa, (2014). Curbing Violence in Nigeria (II): The Boko Haram Insurgency Crisis Group Africa Report N°216.

De-Leone, R. (2008). The Origin of Operations Research and Linear Programming: Learning From the Past to Meet the Challenges of the Future. An Outline by AIRO President Department of Mathematics Information University, Degli Study Camerino.

Larnder, H. (2015). Operations Research: The Origin Of Operational Research. *Institute For Operations Research and the Management Sciences* (INFORMS). INFORMS, Maryland, USA pp.471

Liolio, S. E. (2013). Rethinking Counterinsurgency: A Case Study of Boko Haram in Nigeria. A Thesis Submitted By In Partial Fulfillment Of The Requirements For A Master Of Arts Degree In Peace And Conflict Studies European Peace University (EPU) Private Universität Stadtschlaining, Austria Liosquare@Yahoo.Com; Liosquare@Gmail.Com

Odomovo, A. S. (2014). Research Fellow and Assistant Project Coordinator, Watch/IFRA-Nigeria. *French Institute for Research in Africa* (IFRA-Nigeria), University Of Ibadan, Nigeria. afenomovo@yahoo.co.uk.

Pérouse De Montclos, M. (2014). Nigeria's Interminable Insurgency? Addressing the Boko Haram Crisis Africa Programme. *The Royal Institute of International Affairs*, Chatham House London, UK.

Udounwa, S. C. (2013). Nigerian Army Boko Haram: Developing New Strategies to Combat Terrorism in Nigeria. *Usawc Strategy Research Project*, United States Army War College Class Of 2013 U.S. Army War College Carlisle Barracks, Pennsylvania 17013.

APPENDIX I

UNIVERSITY OF LAGOS, AKOKA

PILOT SURVEY QUESTIONNAIRE

ON

TACKLING BOKO HARAM INSURGENCY

Bellow is measures that could be apply to solve the Boko Haram insurgency in Nigeria, what is your level of agreement to this suggested strategy.

Please tick appropriate option (↔)

Government should:

1   Grant Amnesty to Boko Haram Insurgents to end insurgency
     Strongly Disagreed ( ) Disagreed ( ) Undecided ( ) Agreed ( ) Strongly Agreed ( )

2   Buy Ammunitions to combat Boko Haram to end insurgency
     Strongly Disagreed ( ) Disagreed ( ) Undecided ( ) Agreed ( ) Strongly Agreed ( )

3   Produce Ammunition Locally for National Defense to end insurgency
     Strongly Disagreed ( ) Disagreed ( ) Undecided ( ) Agreed ( ) Strongly Agreed ( )

4   Negotiate cease-fire deal with Boko Haram to end insurgency
     Strongly Disagreed ( ) Disagreed ( ) Undecided ( ) Agreed ( ) Strongly Agreed ( )

5   Seek Foreign Military support to fight insurgency
     Strongly Disagreed ( ) Disagreed ( ) Undecided ( ) Agreed ( ) Strongly Agreed ( )

6   Trade-off Boko Haram prisoners with chibok girls
     Strongly Disagreed ( ) Disagreed ( ) Undecided ( ) Agreed ( ) Strongly Agreed ( )

7   Recruit, train and disburse more grand soldiers to combat Boko Haram in the North
     Strongly Disagreed ( ) Disagreed ( ) Undecided ( ) Agreed ( ) Strongly Agreed ( )

8   Use Air strike to win the battle against Boko Haram
     Strongly Disagreed ( ) Disagreed ( ) Undecided ( ) Agreed ( ) Strongly Agreed ( )

APPENDIX II

Grant Amnesty

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	40	33.3	33.3	33.3
	2	30	25.0	25.0	58.3
	4	10	8.3	8.3	66.7
	5	40	33.3	33.3	100.0
	Total	120	100.0	100.0	

Buy Ammunitions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	40	33.3	33.3	33.3
	3	10	8.3	8.3	41.7
	4	10	8.3	8.3	50.0
	5	60	50.0	50.0	100.0
	Total	120	100.0	100.0	

Produce Ammunition

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	20	16.7	16.7	16.7
	2	20	16.7	16.7	33.3
	3	10	8.3	8.3	41.7
	4	40	33.3	33.3	75.0
	5	30	25.0	25.0	100.0
	Total	120	100.0	100.0	

Negotiate cease-fire deal

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	60	50.0	50.0	50.0
	2	20	16.7	16.7	66.7
	3	10	8.3	8.3	75.0
	5	30	25.0	25.0	100.0
	Total	120	100.0	100.0	

Seek Foreign Military support

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	40	33.3	33.3	33.3
	3	20	16.7	16.7	50.0
	4	20	16.7	16.7	66.7
	5	40	33.3	33.3	100.0
	Total	120	100.0	100.0	

Negotiate cease-fire deal

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	60	50.0	50.0	50.0
	2	20	16.7	16.7	66.7
	3	10	8.3	8.3	75.0
	5	30	25.0	25.0	100.0
	Total	120	100.0	100.0	

Recruit, train and disburse more grand soldiers

Journal of Business Management Science

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	10	8.3	8.3	8.3
	2	20	16.7	16.7	25.0
	3	10	8.3	8.3	33.3
	4	40	33.3	33.3	66.7
	5	40	33.3	33.3	100.0
	Total	120	100.0	100.0	

Use Air strike to win the battle

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	20	16.7	16.7	16.7
	3	30	25.0	25.0	41.7
	4	20	16.7	16.7	58.3
	5	50	41.7	41.7	100.0
	Total	120	100.0	100.0	