



**HUMASS: McU Journal of Humanities,  
Management, Applied & Social Sciences**  
(A Bi-annual Journal of McPherson University)

***Vol. 3 Nov. 2020***

**HUMASS: McU Journal of Humanities,  
Management, Applied & Social Sciences**  
(A Bi-annual Journal of McPherson University)



**A Publication of  
McPHERSON UNIVERSITY  
SERIKI SOTAYO**

**A Tertiary Institution of Foursquare Gospel Church in Nigeria**

*Km 96 Lagos - Ibadan Expressway,*

*P.M.B. 2094, Abeokuta, Ogun State, Nigeria.*

*Tel: +234(0)8128500384,*

*Email: humassmcujournal@gmail.com*

**Vol. 3, Nov. 2020**

**ISSN 2630-6514**

## Editorial

Humass: McU Journal of Humanities, Management, Applied and Social Sciences -is a bi-annual publication of McPherson University, Seriki-Sotayo, Abeokuta, Ogun State, Nigeria. *HUMASS* is a refereed multi-disciplinary journal which seeks to promote and encourage researches and scholarship in various fields including Humanities, Management, Social, Natural and Applied Sciences as well as related disciplines. Contributions from allied disciplines that address the Humanities, Management, Social, Natural and Applied Science issues are also welcomed. Thus, the Journal serves as a veritable outlet for scholars and practitioners involved in research at both theoretical and empirical levels to publish cutting-edge researches aimed at challenging current thinking and proffering relevant solutions to problems of the society. It also publishes critical book review articles.

---

### EDITORIAL BOARD

<b>Dr. Austin Omomia</b>	-	Editor-in-Chief
<b>Dr. Babatunde Oso</b>	-	Natural And Applied Science
<b>Dr. Temidayo Akinrinola</b>	-	Humanities
<b>Dr. Olukemi Olowe</b>	-	Management Sciences
<b>Dr. Babatunde Lawal</b>	-	Business Editor
<b>Mrs. Victoria Ogundairo</b>	-	Secretary
<b>Mr. Ayodeji Adeshina</b>	-	Publicity

### EDITORIAL ADVISORY BOARD

<b>Prof. Sarah Dasaeger</b>	-Laboratory of Food Analyst, Faculty of Pharmaceutical Sciences, Ghents University, Belgium.
<b>Prof. Stephen Fapohunda</b>	-School of Sciences & Communication Technology Babcock University, Ilishan-Remo, Ogun State, Nigeria.
<b>Prof. Apollos Nwauwa</b>	-Professor of History & Director, Africana Studies Bowling Green State University, Ohio, U.S.A.
<b>Prof. Ishola Rufus Akintoye</b>	-Department of Accounting, Babcock University, Ilishan-Remo Ogun State.
<b>Prof. (Mrs) Olubunmi Magbagbeola</b>	-Faculty of Basic Medical Sciences, College of Medicine, University of Lagos, Idi-Araba, Lagos.
<b>Prof. Willie Fawole</b>	-Department of International Relations, Obafemi Awolowo University, Ile-Ife
<b>Prof. Taiye Simbine</b>	-Nigeria Institute of Social & Economic Research Ibadan.

## **HUMMASS: McU JOURNAL OF HUMANITIES, MANAGEMENT, APPLIED and SOCIAL SCIENCES**

### **1. ABOUT THE JOURNAL**

The McU of Humanities, Management, Applied and Social Sciences (HUMASS) is a biannual Journal of McPherson University, Seriki-Sotayo, Ogun State, Nigeria. HUMASS is a refereed journal which covers the various disciplines in the Humanities, Management, Social, Natural and Applied Sciences and other related disciplines. Contributions from allied disciplines that address the Humanities, Management, Social, Natural and Applied Science issue are also welcomed.

### **2. PHILOSOPHY AND OBJECTIVES**

HUMASS is anchored on a philosophy of academic excellence through proper and effective dissemination of output of Humanities, Management Social, Natural and Applied Science researches. The mission is to be one of the most preferred journals by scholars and professionals in the field of Humanities, Management, Social, Natural and Applied Sciences. In achieving this, the Journal will:

- a) Serve as an outlet for scholars and practitioners involved in research at both theoretical and empirical levels towards challenging current thinking and proffering relevant solutions to problems of the society.
- b) Help to promote cross fertilization of ideas among scholars and practitioners with a view to enriching the standards of practice and elevating scholarship.
- c) Serve as a major source of coverage of global policy issues, thereby contributing not only to re-engineering the society, but also bridging the gap between town and gown.
- d) Serve as a forum for disseminating information on conferences and seminars in McPherson University.

### **3. TYPE OF PAPER REQUIRED**

Articles for consideration must be scholarly and critical, demonstrating excellence of research and writing. Such articles must be original, and not under consideration for publication elsewhere. The Journal also publishes rejoinders, book reviews and notes, including preliminary research reports of innovations. Contributions must be in English Language.

### **4. PAPER REVIEW PROCESS**

All articles must undergo a peer review process, and those that satisfy the criteria as set by the Editorial Board are published. Such papers are reviewed by senior academics in the relevant fields.

### **5. CORRESPONDENCE**

Correspondence on contributions, subscriptions and advertisements to HUMASS should be sent to:

The Editor-in-Chief

HUMASS: McU Journal of Humanities,  
Management, Applied & Social Sciences,  
Km 96 Lagos-Ibadan Expressway,  
P.M.B. 2094 Abeokuta, Ogun State.

Email: [humassmcujournal@gmail.com](mailto:humassmcujournal@gmail.com)



## TABLE OF CONTENTS

CONTENTS	PAGES
<b>Probity And Accountability As A Basis For Church Growth In Anglican Diocese Of Lagos West, 1999 – 2018</b>	1 - 15
Moses Adebolu Adetunmbi, Ph.D. (Ife), J.P.	
<b>From Compound Gardens To A Food Society: A Case Of Army Wives In Nigeria's Economy, 1905-1999</b>	16 - 29
Nzemeka Justus Adim, PhD.	
<b>Effects Of Electronic Media On Adolescents' Attitudes To Pre-marital Sex In Nigeria: Advocacy For Religious Ethics As Panacea</b>	30 - 44
Segun Ayotunde Olulowo, PhD and Rev. Akinwunmi Timothy Akinola	
<b>Religious Thoughts On Youths Entrepreneurial Activities In Nigeria</b>	45 - 59
Dada Olorunfemi	
<b>Development Of A Fuzzy-Logic-Based Model For The Classification Of The Risk Of Yellow Fever</b>	60 - 73
<sup>1</sup> Adekunle A.O., <sup>1</sup> Aroyehun A.A. <sup>2</sup> Ayo F.E., and <sup>3</sup> Anyanwu-Ebere C.	
<b>Effect Of Capitalization Of Environmental Cost On The Quality Of Accounting Disclosure Of Shipping Companies In Nigeria</b>	74 - 89
Lawal Babatunde Akeem	
<b>The Avengers: A New Face Of Niger Delta Militancy</b>	90 - 106
Omon Merry Osiki	
<b>A Critical Investigation Into The Use Of Prayer Mountains Among “Aladura” Christians Of Southwest, Nigeria</b>	107 - 119
<sup>1</sup> Olukayode Kehinde Ayoola, M.A. <sup>2</sup> Michael Adeleke Ogunewu, Ph.D	
<b>Historicizing The Resilience Of Traditional Religious Practices In Ikorodu</b>	120 - 130
Omotayo K. Charles	
<b>Ecotoxicological Risk Assessment And Bioremediation Of A Dairy Wastewater by <i>Alcaligenes Faecalis</i></b>	131 - 146
Ayodeji O. Awotula <sup>a*</sup> , Edwin A. Ofudje <sup>1</sup> , Flourish M. Adediji <sup>2</sup> , Olaitan O. Olajuyigbe <sup>3</sup> Esther N. Ezima <sup>4</sup> , and Olumide D. Olukanni <sup>5</sup>	
<b>Book Review</b>	147 - 151
Omomia O. Austin PhD	

# **PROBITY AND ACCOUNTABILITY AS A BASIS FOR CHURCH GROWTH IN ANGLICAN DIOCESE OF LAGOS WEST, 1999 – 2018**

**Moses Adebolu Adetunmbi, Ph.D. (Ife), J.P.**

Department of Religious Studies,  
Ajayi Crowther University, Oyo, Oyo State, Nigeria

E-mail address: [mosesadetunmbi@gmail.com](mailto:mosesadetunmbi@gmail.com)

Tel. Nos: +234 803 4717 327; +234 805 8270 394

## **Abstract**

*The Anglican diocese of Lagos West that emanated from the old Lagos diocese on 20<sup>th</sup> November, 1999 started with the issue of probity and church growth. The pioneer bishop, the Rt. Rev. Peter Awelewa Adebisi, Ph.D, really emphasised this through the vision and mission statement he declared at the inauguration. The diocese since inauguration has done a lot in ensuring that it really addresses these two concepts in the vigorous pursuit of its evangelical work. The diocese at its inauguration had less than 100 churches, but as at December 2018, the number has risen to almost 500. This paper therefore looked at the issue of probity and accountability which has many synonyms such as integrity, decency, transparent honesty, godliness and righteousness and how it has contributed to spiritual, economic, social and political development of the diocese. This has made the diocese of Lagos West one of the leading dioceses not only in Lagos but in the Church of Nigeria (Anglican Communion) (Akinola, 2002). The methodologies used are both historical and sociological as the paper carried out an in-depth study of the diocese from inception through consulting the archives of the diocese which included the presidential addresses of the pioneer and current bishops, synod programmes and proceedings as well as the minutes of the synods. Participant observation method was equally used through active participation in some key worship services and key gatherings of the diocese and consultation with both the lay and clergy to elicit facts on effective management of the issue of probity and church growth. The findings arising from this paper will be a reference point to further study by other researchers. The recommendations will strengthen the diocese further in its pursuit of probity and church growth in the diocese and alongside with its vision, will try to sustain being a leading diocese in the Church of Nigeria (Anglican Communion).*

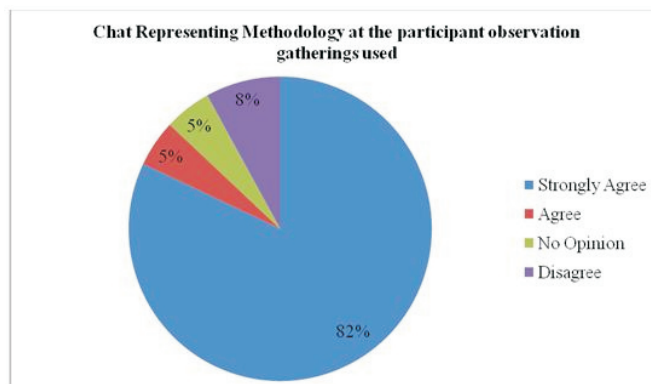
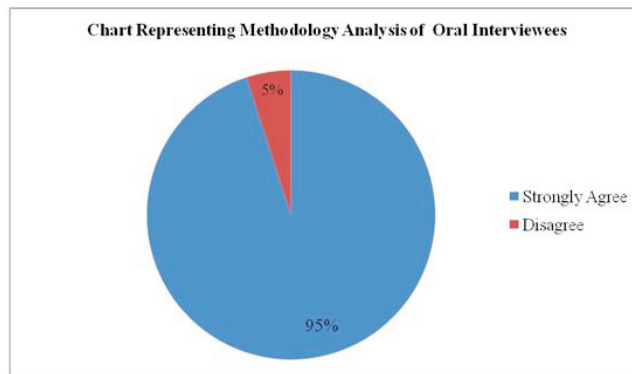
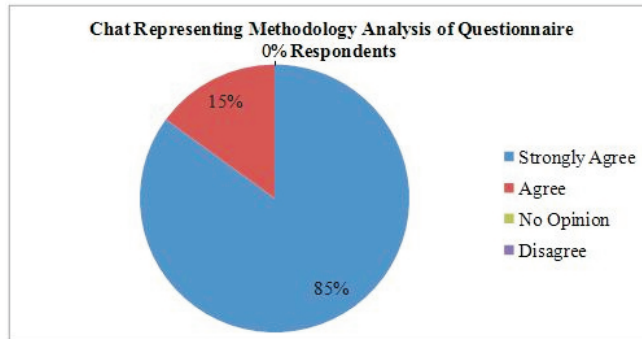
**Keywords:** Probity, Accountability, Church Growth, Integrity, Honesty, Righteousness

## **Introduction**

The Anglican diocese of Lagos West which was one of the last dioceses created at the tail end of the tenure of Archbishop Abiodun Adetiloye, the erstwhile bishop of the defunct diocese of Lagos, archbishop of Province One, Metropolitan and Primate of the Church of Nigeria (Anglican Communion) was the 72<sup>nd</sup> diocese in the Church of Nigeria. Today the Church of Nigeria has one hundred and sixty-seven dioceses with over one hundred and seventy bishops serving the church (Adetunmbi, 2008). Lagos West diocese was carved out of the former diocese of Lagos having fulfilled all the prerequisite conditions attached to the creation. This paper asserts that it was probity that accounted for the growth of the diocese as the fastest growing diocese in the Church of Nigeria (Anglican Communion) (Adetunmbi, 2008). This paper traces the growth of the diocese of Lagos West and attributed this growth to probity and accountability of the leadership of the diocese through the pioneer and current bishops of the diocese as well as the priests across the length and breadth of the churches in the diocese. The growth was feasible in the following areas: Spirituality, Planting of churches, Youth development, and Aggressive evangelism, Triumphant Convocation, Diocesan Christian Mothers and Covenant Seed.

## **Methodology**

A mixed method, which entails the use of both historical and sociological methods, was used to elicit facts of probity and church growth in the Anglican Diocese of Lagos West. Archives of the diocese were consulted to elicit information on the growth of the diocese; presidential addresses of the former and current bishops to synods since inception, synod programmes and proceedings as well as the minutes were carefully examined. Not only this, participant observation method was also employed by participating in some key worship services, and key gatherings like dedication of churches and synod services. Oral interviews were conducted among selected people cutting across the leadership of the diocese and parishes which included the current bishop, 20 priests and 25 lay people, 15 out of which are youth and 10 elders across the ten selected archdeaconries and the Cathedral. All the interviewees attested to the fact that the diocese had recorded a significant growth through probity and accountability. One hundred copies of questionnaires were also administered to respondents within the selected churches. 85 people strongly agreed to the fact that probity and accountability were responsible for church growth in the diocese of Lagos West representing 85% while 15 people agreed representing 15%. Data from each of these questionnaires and interviews are presented below using pie charts.



### **Historical antecedents and evolvement of the Anglican Diocese of Lagos West**

The Church Missionary Society (C.M.S.) was founded in 1799 in England; as an association of persons united in obedience to the call of God to proclaim the gospel in all lands and to gather the people of all races into

fellowship of Christ's Church. In order to further the work of evangelism in West Africa, the West African Mission of the Society was formed on the 14<sup>th</sup> day of April, 1804. In furtherance of the work of evangelism on the West Coast of Africa Revd Henry Townsend landed in Badagry on 17<sup>th</sup> December 1842 (Ward 2006). He was sent to Abeokuta from where an invitation for

evangelism had been sent to the Church Missionary Society in England. He came to explore the possibility of starting a mission in Yorubaland. His report was favorable. The Church Missionary Society immediately decided to come over for mission in virgin land of West Coast (Adebiyi, 2005).

The first batch of missionaries was sent to Abeokuta in 1845. The team included Revd C.A. Gollmer, Revd Henry Townsend and Revd Samuel Ajayi Crowther and a few lay persons; the work went on well; but there was persecution of Christian workers in 1867 (Ward, 2008), which led to the movement of some Christians to Lagos. They later founded St. Jude's Church, Ebute Metta. On 26<sup>th</sup> December 1851, Captain Glover led a British Squadron in fight against slave merchants in Lagos and won. He was later sent to go and preach the gospel by the C.M.S. Missionary at Badagry. A Catechist, James White was sent by Revd. C.A. Gollmer in response to the invitation. He became the first preacher of the gospel on the Island of Lagos on January 10, 1852. In 1852, Bishop Vidal was made the Bishop for Sierra Leone with jurisdiction over the Anglican Churches along the whole coast of West Africa (Burgess, 2006). The mission into the north was launched in the Niger. It was initially difficult because of the resistance imposed by the Muslims. Later, a breakthrough was recorded and evangelism went on; because the Niger Mission has assumed large dimension and because of its remoteness from Sierra Leone, an all African Mission was established. It was to be headed by

Revd Samuel A. Crowther as its Bishop in 1862. By 1918 the gospel had been introduced to many parts of the country. Lagos was the headquarters of the Diocese of Western Equatorial Africa. This was divided into two dioceses in 1919 – The Diocese of the Niger and the Diocese of Lagos (Okorochoa, 2017).

Before the creation of the Diocese of Lagos West, the Diocese of Lagos had given birth to seven Dioceses, namely the Diocese of Ibadan (1952); Ondo/Benin; (1952); Northern Nigeria; (1954); Ondo, (1962); Egba/Egbado, (1976); Ijebu (1976); and Remo, (1984). Also, the parishes that were within the six Archdeaconries which formed the nucleus of the Diocese of Lagos West, namely: Agege, Badagry, Ikeja, Ikorodu, Somolu and Ojo, have a long history of interaction in various District Church Councils and Sub-Urban District Church Councils. As early as 1962, Badagry was grouped with Otta and Agege was then known as Lagos Lagoon Area Churches. From 1964-1968, it was called Lagos Lagoon Stations Provisional District Church Council. In 1972, it reverted to Badagry Pioneering Area based in Badagry town and headed by Revd (later Archdeacon) J.I. Ogunmilade now of blessed memory and became a Provisional District Church Council in 1977. While Badagry was going through its own development, Awori and Apapa Archdeaconries were created to include Apapa, Araromi and Ojo District Church Councils. Badagry then remained part of Lagos Archdeaconry. Later in 1988, Apapa Archdeaconry was renamed Badagry Archdeaconry with the inclusion of Badagry Church

Council (Adetunmbi, 2008)

According to Adebisi, 2008, what was then called Awori Archdeaconry was created on the 1st of January 1987, consisting of three District Church Councils Agege, Ikeja and Otta with the Archdeaconry headquarters at Christ Church, Agege. Ikeja District had its seat at Bola Memorial Anglican Church, Ikeja. The other churches within Ikeja District were Archbishop Vining Memorial Church (AVMC), Ikeja, Archdeacon Ogunbiyi Memorial Church, Ikeja; the Church of Ascension, Opebi, and host of others. St. James Otta reputed to be the second oldest church in Nigeria was the headquarters of the churches in Otta District Church Council (Adebisi, 2008).

Later in 1990, what is now known as Ikeja Archdeaconry was carved out of Awori Archdeaconry with its headquarters at Archbishop Vining Memorial Church (now the Cathedral) and its first Archdeacon was Ven. Dr. Peter Awelewa Adebisi. Other churches in Ikeja, Oshodi, Isagatedo and Mafoluku then became part of the Ikeja Archdeaconry. Churches in Maidan and Mende under the old Sub-Urban District Council and Churches in Ketu, which were formerly under Ebute-Metta Archdeaconry later became part of the Ikeja Archdeaconry. The residue of the Awori Archdeaconry was renamed Agege Archdeaconry. It consisted of all the Churches within Agege, Ipaja, Idimu, and Otta area. The Archdeaconry had since developed in size and number of churches. The Ojo Archdeaconry was formerly composed

of a group of churches administered by Awori District Church Council from Agege and Otta at different times, until Apapa District Church Council was created to embrace among others, Ojo group of churches. The present Ojo Archdeaconry was created out of Badagry Archdeaconry on 20th June 1994 with its headquarters at St. Michael's Church, Ojo (Odedeji, 2015).

The history of the Anglican Church in Ikorodu shows that churches under the Ikorodu Archdeaconry were at one time or the other under the Lagos Sub-Urban District Council with headquarters at Odi-Olowo and later at Idi-Oro, both in the Diocese of Lagos. In 1994, several churches in Ikorodu and its environs were merged with Somolu Archdeaconry and that arrangement lasted till 1996 when Ikorodu Archdeaconry was created. The present Somolu Archdeaconry was the old Somolu District Church Council, created out of the Lagos Sub-Urban District Church Council. Somolu/ Ikorodu Archdeaconry was created in 1994, whilst Somolu Archdeaconry came into being in August 1996 (Adetunmbi, 2008).

This historical background would not be complete without mentioning the Diocesans, who over the years, have laboured to build the Diocese of Lagos, which is the 'mother' Diocese to the Diocese of Lagos West. They are: Rt. Rev. F. Melville Jones (1919-1940); the Rt. Revd. L.G Vining (1940-55); the Rt. Revd. A.W. Howells II (1955-63); the Rt. Revd. S.L Kale (1963-74); the Rt. Revd. F.O. Segun (1974-85), and the Most Revd. J .A. Adetiloye (1985-1999) (Owoyele).



### **The Conception and Birth of the Diocese:**

Constitutionally, the creation of a Diocese in the Anglican Communion had to pass through a set process whereby the Diocesan Board of the mother diocese has to move a motion after the said area has submitted an application through the Diocesan Synod to the Province with all the signatories captioned. The Board will recommend to the Diocesan Synod will forward the application onward to the Province of Nigeria for approval (Adetunmbi, 2008). In 1997, nine years after the Most Revd Abiodun Adetiloye had given thought to the restructuring of the Diocese, the matter was discussed at the Diocesan Board, meeting of the Diocese of Lagos. The Board then set up a Committee, which was headed by Chief G.O.K. Ajayi, (SAN). The committee was mandated to consider the way forward in terms of future administration of the Diocese of Lagos and its position as it concerns the Primatial Seat. At the end of extensive deliberation and consultations, which included taking of oral evidence from the various churches and individuals, the Committee recommended the sub-

division of the then Diocese of Lagos into three autonomous Dioceses; one of which was the Diocese of Lagos West (Adetunmbi, 2008).

Usually, according to Hon. Justice B.O. Ogunade, who later headed the Implementation Committee for the creation of the Diocese of Lagos West and now the first and current Chancellor of the Diocese, "the creation of a Diocese may emanate from the Archdeaconries or upon the initiative of the Diocesan Bishop, or even the Diocesan Board" (Adetiloye, 1996). Surprisingly, the decision to create the Diocese in question came from the Diocesan level. Thus at its meeting of April 18, 1999, the Diocesan Board of the Diocese of Lagos, accepted the recommendations of the Committee and gave approval for the creation of the Diocese of Lagos West (Oguntade).

The historic creation of the Diocese of Lagos West took place on November 20, 1999 following a due process of Diocese creation in the Church of Nigeria Anglican Communion. Archbishop J.A. Adetiloye, 1997 was able to present a formal application to the Dean of the Church of Nigeria. In the said application, he stated:

*I commend to you and the Church of Nigeria the application for the creation of Diocese of Lagos West out of the present Lagos. What remained of Lagos Diocese after the creation of Remo Diocese in 1984 has grown very rapidly particularly since 1986 by which the Diocese had a total of 66 clergymen comprising of 50 full time and 16 part timers with 101 out of 161 churches without counting Catechists or even Church Agents. Now of the 253 churches, there are a total of 340 clergy men. The proposed Diocese of Lagos West covers Ikeja, Agege, Badagry, Ojo, Somolu and Ikorodu Archdeaconries. And I believe that it should be quite viable. I therefore have no hesitation in commending it for approval.*

The then Primate of the Anglican Church, The Most Rev. Dr Joseph Abiodun Adetiloye performed the inauguration of the new Diocese and during the same service the enthronement of The Rt. Revd. Dr. Peter Awelewa Adebisi as the pioneer Bishop of the Diocese of Lagos West took place at the Archbishop Vining Memorial Church Cathedral (AVMCC), Ikeja. The Bishop of Jos, The Rt. Revd Benjamin Kwashi who

was the preacher said that would be the first Diocese created with vision and mission statement already spelt out. He therefore gave a challenge to members of the new Diocese to live up to the challenges of the vision. Anglican Church, being a church that recognizes and follows the rule of law, the legal process of the making of a Statutory Church was properly followed and necessary documents were signed and countersigned (Adetiloye, 1999).

### **The Vision Statement of the Diocese**

*The Vision Statement reads: To be the leading Diocese in the Church of Nigeria in preparing the Nation for the second coming of Our Lord Jesus Christ with three fold agenda – Spiritual development of the Churches in the Diocese, Youth Development and aggressive Evangelism.*

### **The Mission Statement of the Diocese**

*To ensure a sustained growth in the number of churches and worshippers within the Diocese.*

*To continue to enhance the mode of worship, teach and preach the word of God in all our churches thereby creating worshippers fit for the kingdom of Heaven.*

*To assist every member in the understanding and practice of the 39 Articles of our faith.*

*To develop and inspire in every church the principles of self-sufficiency and Christian generosity, thereby ensuring a strong and viable Diocese.*

*To continue to promote peaceful and cordial relationship with the other Dioceses, in order to ensure the success of our common commitment.*

### **What is Probity?**

Probity according to Oxford Dictionary 2009 defines it as the quality of having strong moral principles; honesty and decency. It has the following synonyms: integrity, honesty, uprightness, decency, morality, rectitude, goodness,

virtue, right-mindedness, trustworthiness, truthfulness, honour, honorableness, justice, fairness, equity. According to Cambridge Dictionary 2010, it is defined as “complete honesty; the quality of being honest and behaving correctly”. According to



Merriam Webster's dictionary, "it is adherence to the highest principles and ideal" while Collins English dictionary defines it as "a high standard of correct moral behavior". A public authority must be able to demonstrate to suppliers and the community that it conducts its procurement activities with high

standards of probity and accountability. Probity requires that a public authority conduct its procurement activities ethically, honestly and fairly. Elements of a procurement culture that promotes and demonstrates high standards of probity include the following: (Adetunmbi, 2017)

*Expected behaviours are articulated and enforced.*

*Officers involved are skilled, knowledgeable and experienced.*

*Appropriate checks and balances are in place at various stages in the procurement process.*

*The concept of conflict of interest is well understood and strategies are in place to identify and manage potential issues.*

*Communication with suppliers is consistent and does not disadvantage or advantage one supplier over others.*

*Officers are not compromised in their ability to act, or to be seen to act, impartially.*

*Confidentiality of supplier information and evaluation processes is secure.*

Accountability on the other hand requires that a public authority be able to publicly account for its decisions and take responsibility for the

achievement of procurement outcomes. Elements of a procurement culture that promotes and demonstrates a high level of accountability include the following:

*Responsibility for decisions is readily identifiable.*

*Adequate records are maintained to enable external scrutiny of decisions.*

*Compliance with Government and State Supply Commission policies.*

*Contract award details are made public as required.*

*Processes are in place to provide feedback to unsuccessful bidders and to manage supplier complaints.*

Accountability on the other hand requires that a public authority be able to publicly account for its decisions and take responsibility for the

achievement of procurement outcomes. Elements of a procurement culture that promotes and demonstrates a high level of accountability include the following:

## **Biblical Basis for Probity and Accountability**

Accountability is simply being responsible for one's actions. In order to establish Christian accountability, there needs to be trust. Developing trust is a

slow process and it takes time to develop and grow. As people meet together to share, they begin to establish a rapport with one another. How is this accomplished?

*“Active listening is essential to developing trust. James 1:19 says, “My dear brothers, take note of this: Everyone should be quick to listen, slow to speak and slow to become angry.” A non-judgmental attitude is another essential element. Remember, we can be accepting of an individual while being discerning of the situation. Matthew 7:1-2 says, “Do not judge, or you too will be judged. For in the same way you judge others, you will be judged, and with the measure you use, it will be measured to you.” Caring for each other is also essential. 1 John 4:21 says, “And he has given us this command: Whoever loves God must also love his brother.” Accountability involves a willingness to open each other up and share sensitive or personal information. This is why trust is so imperative.”*

Probity and accountability can be established firmly as entrenched in Acts of the Apostles chapter 15 while Paul and Barnabas were at Antioch of Syria, some men arrived and began to teach the believers “unless you be saved.” Paul and Barnabas proved probity and accountability by disagreeing with them and putting up a vehement

argument with them cf Acts 15:1ff. Probity and accountability go with discipline as can be seen in the case of Ananias and Sapphira in Acts chapter 5:1-11 where the couple conspired against collective decisions of the early believers. Prophet Samuel in 1 Samuel Chapter 12 verses 1-5 states:

*Then Samuel addressed all Israel: I have done as you asked and given you a king, your king is now your leader. I stand here before you – an old, gray-haired man – and my sons serve you. I have served as your leader from the time I was a boy to this very day. Now testify against me in the presence of the Lord and before the anointed one. Whose ox or donkey have I stolen? Have I ever cheated any of you? Have I ever oppressed you? Have I ever taken a bribe and perverted justice? Tell me and I will make right whatever I have done wrong.” “No,” they replied, “you have never cheated or oppressed us, and you have never taken even a single bribe.” “The Lord and His anointed one are my witnesses today.” Samuel declared, “that my hands are clean.” “Yes, he is a witness,” they replied.*

Psalms 15 is a very good example of probity and accountability as it brings

out the qualities in a man that will enter God's presence on His holy hill as follows:

- Blameless lives and doing what is right
- Speaking the truth from his sincere heart
- Those who refuse to gossip or harm their neighbours
- Those who don't speak evil of their friends
- Despising flagrant sinners
- Those who lend money without charging interests
- Those who cannot be bribed to lie about innocent

Jethro's visit to Moses his in-law gave good counsel to him to support accountability and probity in Exodus chapter 18 where Jethro counseled him

to appoint for them some capable, honest men who fear God and hate bribes as leaders over groups of one thousand, one hundred, fifty and ten.

“They should always be available to solve the people's common disputes, but have them bring the major cases to you. Let the leaders decide smaller matters themselves. They will help you carry the load, making the task easier for you.” (Exodus 18:22)

Also in 1 Peter chapter 5 verses 1-9, Peter brought out basic principle of Christian living. Advice for elders and young men which goes along with probity and accountability were contained in this chapter.

### **Church Growth in Lagos West Diocese**

From the history of the diocese of Lagos West from 1999 to 2017, the diocese has grown in leaps and bounds and this can be seen in the following areas categorized into two major areas of Spiritual and Physical. This will be looked into as follows:

#### **Spiritual Development:**

#### **Covenant Seed**

To help in developing the Diocese, a member suggested the setting up of the “Covenant Seed Scheme” to raise fund specifically for evangelism year 2000. The aim of the Scheme is to encourage every member to give at least N500 every month to the Diocese. The fund is strictly to be used for church planting, church growth and development, spirituality and evangelism in the Diocese. Because the Bishop has a listening ear and welcomes ideas from all sources, he accepted the scheme.

The operation of the scheme started with launching at every Archdeaconry and some very important parishes and from there to every church

and parishioners' response was initially slow but the progress was steady. It was assumed that 30% of an average numerical strength of 150,000 parishioners, within the Diocese should be able to pay this minimal amount of N500. Records show that the number may be more. In the year 2000 when the scheme was launched, some members gave N500, 000 to N2 million in cash or

land gifts/donations. The diocese was able to buy a parcel of land adjacent to AVMCC in Oba Akinjobi Road, GRA, Ikeja at a cost of over #750 million. Over the time, the scheme has stabilized. People are buying - in on the scheme steadily and the table below shows the financial progress of the Diocese in the Covenant Seed Scheme (Adebiyi, 2013)

	2000	2001	2002	2003	2004
SPECIAL INCOME.	N	N	N	N	N
COVENANT SEED	(421,850)	4,554,804	3,721,585	14,282,199	23,629,535

The income is encouraging and healthy. The expenditure also is a reflection of the evangelical progress in the Diocese. The integrity and accountability of the leadership, to a very large extent, is responsible for the success of the scheme. One of the cardinal points in the mission statement of the Diocese is aggressive Evangelism leading to Church Planting and Discipleship. It is the desire of the Diocese that no parishioner travels more than three kilometers before an Anglican Church is located for worship. The most costly and valued commodity in Lagos State and her suburb is land; yet, it is needed to establish new churches and other infrastructures that would support evangelism (Adebiyi, 2013).

The Covenant Seed Scheme was established to address this issue. It was designed for all members – rich and

poor, male and female, young and old - to be involved in the spread of the Gospel through their regular contribution. Some members have in the past six years, under the umbrella of the Covenant Seed Scheme, donated landed properties and equipments, while others volunteered to build Churches. Some others are involved in the training and payment of salaries and allowances of Priests within and outside the Diocese. This calls for grassroots - driven policy and community building.

The Diocese, through the Covenant Seed Scheme, has expended about 200 million Naira in establishing 94 (Ninety-four) Churches and renovating and improving facilities in a number of old churches. The diocese was able to establish well over three hundred churches within the period this paper covers.

	2014	2015	2016	2017	2018
SPECIAL INCOME.	N	N	N	N	N
COVENANT SEED	86,788,290	97,989,000	99,140,886	102,458,986	246,877,985

### **Evangelism**

The diocese of Lagos West right from inception with the efforts of the pioneer bishop coupled with the present one had taken the issue of aggressive evangelism very seriously at the parish, archdeaconry and diocesan levels. Every parish is pre-occupied every day of the week with one evangelical programme or the other in the diocese. Such programmes include: Monday hour of blessings, Wednesday anointing service, the last three days of the month revival in some churches while some are doing first three days of the month revival, others combine the last day cum first two days of the new month. Night vigil prayers are compulsory in all

churches while open-air crusades are equally carried out every quarter in all the parishes. The diocese embarks upon periodical evangelism voyage to remote areas of the diocese usually led by the bishop and wife.

Various evangelical activities sustain the parishes spiritually and it also enhances the growth in terms of population. This has really helped the diocese as it was declared the fastest growing diocese in the Church of Nigeria (Anglican Communion)

### **Planting of Churches**

The table below gives the analysis of the landed properties acquired for the establishment of new churches.

**TABLE OF LAND PLOTS ACQUIRED IN THE DIOCESE 1999 – 2018**

Archdeaconry	Plots	Diocese	Archdeaconry	Churches	Gifts.	Total
AVMC	2	-	-	-	N18m	18,000,000
AGEGE	13	950,000	2,500,000	1,900,000		5,350,000
IKEJA	16.5	14,000,000	3,700,000	500,000		18,200,000
BADAGRY	-	-	-	-	-	-
OJO	34	1,000,000	-	6,950,000	550,000	8,500,000
SOMOLU	4	374,000	213,800	33,792		621,592
IKORODU	28	80,000	412,000	-	7,000,000	7,492,000
IPAJA	3.5	26,000 -	-	400,000	150,000	550,000
IDIMU	3	-	-	1,000,00	1,000,000	2,000,000
ISOLO	14	N2.1M	N.3M	N11.15M	-	13,550,000
AWORI	3	-	-	-	GIFT	
KOSOFE	18.5	1,700,000	-	1,275,000		2,975,000
FESTAC	40	1,100,000	2,550,000	22,895,000		26,545,000
OTHERS		10,000,000				10,000,000
	176.5	31,304,000	9,675,800	46,103,792	26,700,000	113,783,592



In addition to the above, the Diocese spent on other evangelical projects - N14,170,000.00 in 2003, N24,572,970.00 in 2004 and N12,513,000.00 in 2005.

### **Triumphant Convocation**

This is an annual activity tagged "Jesus Carnival" where every parish is involved in a week long activity like film show, youth programme, revivals/crusades, football match, and this is rounded off with carnival on Easter Saturday where every archdeaconry and the Cathedral will appear in their 'T' shirts with Face cap to match and carry out a match past competition with the lord bishop taking the general salute to all the twenty-nine archdeacons/Cathedral as they file past the podium. Results of winners of the match past and displays would then be announced and prizes awarded.

### **Youth Development**

The diocese of Lagos West gives encouragement to the youth body of the diocese through youth development. The diocese gives them various slots of representations in all the various arms of the diocese ranging from the parish, to the Archdeaconry/Cathedral and the diocese. They are given opportunities to select their representatives to the diocesan synod, Cathedral Standing Committee, Archdeaconry boards as well as the parish council while the bishop selects his own nominees among them to the synod who will also be in the Diocesan Board of the diocese. Apart from this, the diocese established the diocesan youth chapel for them in the 3<sup>rd</sup> floor Archbishop Vining House where the youth conduct their services under

the guidance of the youth chaplain of the diocese. The youth at the parish levels are very active, dedicated and committed to the tenets of Anglican ethos. Many of them are on full scholarship, grants and bursaries as financial aid for their studies especially the indigent ones among them while those seeking employment opportunities are connected with those who could be of assistance to them especially those in the industry sectors.

### **Physical Development:**

#### **Establishment of Missionary Schools**

The diocese of Lagos West in conjunction with the diocese of Lagos, its parent body, jointly had many schools which are put under Lagos Schools' management board which include Lagos, Lagos West, Badagry, Lagos Mainland and Awori dioceses. Such schools are Babington Macaulay, CMS Grammar School, Bishop Howells School and others. However, diocese of Lagos West established Adetiloye Group of Schools in Festac, Pentecost College, Iba as well as many Nursery/Primary schools and secondary schools at various parishes' levels. Some individuals also build secondary schools and handed them over to the diocese as bonafide owner. Example of such is Samuel Adegbite Anglican Secondary School, Idimu.

#### **Building of Medical Hospitals and Clinics**

The diocese encourages many parishes that could afford the establishments of hospitals/clinics to do so as part of the ministry that the church shares. The diocese set the pace by the

establishment of the Diocese of Lagos West Medical Hospital in Agege while Church of the Pentecost, Festac Town also established Pentecost Medical Centre (PMC). These two hospitals are licensed by the Lagos State Ministry of Health and Medical and Dental Council of Nigeria (MDCN) Lagos chapter. They have qualified and certified trained Doctors, Nurses and Midwives as well as Laboratory staff. They provide Medical care facilities and carry out surgical operations by surgeons.

### **Diocesan Christian Mothers**

This organisation is usually referred to as Diocesan women organisations in dioceses but in the Diocese of Lagos West, it has been christened Diocesan Christian Mothers which includes Mothers' Union, Women's Guild, Ladies Guild, Girls' Guild, Girls' Brigade, Young Wives and Spinters Club. The Christian Mothers always have their yearly conferences in stages according to the groups. The Christian Mothers' efforts at establishing Women Centre at Ipaja in Ipaja area of Lagos State is highly commendable as this centre can accommodate over one thousand delegates conveniently at a time including accommodation.

### **Clergy Development and Empowerment**

The diocese of Lagos West was able

to acquire 5.2 acres of land at a cost of #130 million in Ijanikin area of the diocese for clergy development. Each clergy will be encouraged to build their houses in the estate close to each other. Through this, they will live healthy lives that will reduce loneliness and boredom; they can be involved in recreational activities and share experiences and ideas together.

### **Probity and Accountability in the Diocese of Lagos West**

The diocese of Lagos West through the pioneer and current bishops were able to establish firmly the issues of probity and accountability as basis for church growth because Bishop Peter Awelewa Adebisi used to emphasise it at every meeting and gathering with his priests that everyone must live above board to prove themselves worthy ambassadors of Christ. Equally, his successor in office, Bishop James Olusola Odedeji also makes it clear that he has zero tolerance for indolence, lack of probity and lack of accountability. This puts all priests on their toes as they guard their integrity jealously. There is “checks and balances” through which probity and accountability are guided jealously by the diocese. The bishop has corporal right over any erring clergy to discipline him in line with the constitution of the diocese. Such means include:

*Monthly meetings of the Parish Council of every parish and the Cathedral Standing Committee whereby they consider the minutes of the body as well as financial statements of the church, copies of which must be submitted to the bishop's office on a monthly basis.*

*The annual vestry meeting of every Parish/Cathedral that takes place in the month of February where the activities of every church is published and sent to the bishop's office which will include the audited account for the year ended.*

*At the diocesan level, the Diocesan Board and Diocesan Board of Finance are in charge of all the activities of the diocese standing in gap for the synod that meets once a year. Since the Anglican Church is Episcopally led and Synodically governed, the body is accountable to the synod.*

### **Concluding Remarks**

Probity and accountability could be said to assist the growth of the church in the diocese of Lagos West as the pioneer bishop laid a very solid foundation for the diocese to operate upon while his successor has also sustained it and even surpassed his own efforts because he is younger in age and energy. This has made many dioceses in the Church of Nigeria (Anglican Communion) to look unto the diocese as the most viable diocese as well as the fastest growing diocese. In terms of Church planting, the diocese surpassed many dioceses in Nigeria as the diocese was able to plant well over three hundred churches within two decades of its existence as a diocese. Probity and accountability was pronounced in the way that each person involved in the administration and running of the affairs is transparent enough in terms of financial probity. This entrust the confidence of members in their priests and bishops that they are men of integrity that could be trusted.

### **References**

**Adebiyi, Israel Dupe,**

(2018) Interview Respondent, 86 years.

**Adebiyi, Peter, (2000),**

Presidential Address at the Maiden Synod of Lagos West Diocese.

**Adebiyi, Peter, (2003),**

Presidential Address to the Synod of the Diocese of Lagos West.

**Peter Adebiyi, (2006),**

Bishop's Charge to the Synod

**Akinola, Peter, (2003),**

Primate's Address to the Standing Committee of the Church of Nigeria (Anglican Communion)

**Adejuwon, James, (2018),**

Examination of Evangelical Work of Early Church Fathers and its challenges to Today's Evangelists in the Diocese of Lagos West, Masters Dissertation, CGTS

**Adetiloye, J.A., (1999),**

Presidential Address at the Church of Nigeria Standing Committee.

**Adetunmbi, M.A. (2008),**

Growth and Change in the Church of Nigeria (Anglican Communion), Ph.D. Thesis, z Obafemi Awolowo University



**Burgess, S.M. (ed.), (2006),**

*Encyclopedia of Pentecostal and Charismatic Christianity*,  
New York: Routledge Taylor  
& Francis Group.

Minutes of the Meeting of the  
Diocesan Board of the Diocese  
of Lagos West, April 2005

**Ogunade, B.O. (Justice), (2018),**

Chancellor of Lagos West  
Diocese, Interview Respondent,  
80 years.

**Okorocho, Cyril, (2017),**

An Address presented at All  
Clergy Conference at Enugu

**Owoyele, Israel, (2018),**

Interview Respondent, 54 years

**Ward, Kevin, (2006),**

*Global Anglicanism*, (London:  
OUP)

Websters Dictionary (2010),  
[https://www.merriam-  
webster.com](https://www.merriam-webster.com)

# FROM COMPOUND GARDENS TO A FOOD SOCIETY: A CASE OF ARMY WIVES IN NIGERIA'S ECONOMY, 1905-1999

Nzemeka Justus Adim, PhD.

Department of History and Diplomatic Studies,

Anchor University, Lagos.

jnzemeka@aui.edu.com.

## Abstract:

---

*This article examines the economic development of Nigerian army wives from compound garden to a food society. Since army wives live "behind the walls", very little of their economic culture is known to the general public, particularly, their involvement in food production and the food security of the nation. The phenomenon began as a compound garden in colonial barracks, but subsequently transformed into farming after independence. Apart from agriculture, army wives were also visible in craft and industry, trade and other commercial activities. Drawing on primary and secondary historical sources, this study discovered that military culture and the "supposedly peripheral environment" of the women was no hindrance to their economic production. It is also established that women's economic activities were only complementary to the profession of their military husbands because of division of labour in the barracks. This paper concludes that the economic production of these women has contributed to food security and economic development of the country. Therefore, government needs to support the efforts of this group through empowerment and loans to enable them achieve self-reliance in food production.*

---

**Key Words:** Nigerian Army wives, barracks, compound-garden, development, economy.

## Introduction

The role of African women in economic development has remained largely unacknowledged in many quarters because of gender and sex stereotype. The persistence of this situation seriously impedes the realisation of the expressed intentions of African governments to make full use of all human resources available for purposes of development (Human Resources Development Division, United Nations Economic Commission for Africa, 1972, 359). The image(s) of army wives in this regard is no exception because the generality of the public perceived them as indolent and engrossed in domesticity and reproduction. However, since Nigeria's independence, public perception of army wives has improved

astronomically because they helped their husbands in the Nigerian Civil War by providing victuals, nursing the wounded and also engaged in governance (Babangida, 1988:63-68).

It is also noted that first ladies in Nigeria have done everything in their power to move out of the shadows of their husbands and stand right beside them, and if they are not careful, then "right in front of them" (Agosu, 2009, 43). This implies that first ladies in Nigeria have created spaces of authority almost comparable to that of their spouses. The involvement of the Nigerian Army Officers' Wives Association (NAOWA) in public space has equally popularised the social engagement of this group in the country (Babangida, 1988:63-68). With the coming of the Babangida

administration, army officers' wives engaged in the mobilisation and empowerment of women, construction of schools, markets, cottage industries and cooperatives societies (Okoye, 1993: 34). Since then, they have continued in the socio-economic development of the nation and welfare of women in the barracks (Lufadeju, 1987: 25).

My objective in this paper is to explore the economic development of army wives from compound garden to a food society. Its primary aim is to document an important aspect of the economic history of army wives and perhaps save it from going into oblivion. Therefore the analysis is situated in the larger context of gender, economy and development.

### **Historical Development of the Nigerian Military and Review of Relevant Literature**

The historical setting reveals that the Nigerian military began with the West African Frontier Force (WAFF), described as one of the oldest formalised military units in the West Coast of Africa. It evolved from the Hausa militia formed in 1864 and later developed into the Royal Niger Constabulary in 1893 and the West African Frontier Force (WAFF) in 1897 (Kirk-Greene, <sup>1964</sup>: 129-147). Records also indicate that the WAFF was formed to protect British interests in Nigeria and also checkmate the incursion of the French in the critical years of the Anglo-French rivalry on the Niger (Ukpabi, 1966: 485-501).

The force was essentially the brain-child of Joseph Chamberlain, the

Colonial Secretary, and was the ultimate answer to the growing military commitments of the Colonial Office on the West Coast of Africa (Ukpabi, 1966: 486). Therefore from 1898 the WAFF became a driving force in the history of British West Africa and fully justified the confidence of those who fashioned it as a war machine (Ukpabi, 1966, 486).

Military barracks began in Jebba before a change of policy that transferred them to Lokoja due to unhealthy climate and strategic considerations and from there to Zungeru, the new capital city of Nigeria in 1914 (Haywood and Clarke 1964, 33). It is noted that the British established a military force in colonial Nigeria without a commiserate food security for its force. Prior to the incorporation of indigenous soldiers' wives in the barracks in 1905 and their European counterpart in 1920, only few European women were in colonial barracks on personal recognition of their spouses (Callaway, 1987: 166-167). They were invisible in public affairs because the organisation was a male-dominated institution and guided by the Victorian gender ideology of separate spheres.

For instance, the population of colonial barracks was not as explosive as modern barracks. They were made up of white people, nursing sisters, Northern Nigeria Regiment (N.N.R.), composed of officers and civilian officials, and indigenous helping hands (Larymore, 1911: 8). As explained elsewhere:

*All African soldiers except recruits had wives in the barracks, who cooked for their husbands and swept the huts and the company grounds. Each company had its headwoman, the magajia – responsible for the cleanliness of the barracks and for the dress, deportment, and morals of the wives. The headwoman attended on company “request day,” when grievances and suggestions could be aired. Sporting a red sash, she accompanied officers on their inspections; her wrath was more fearsome than the RSM’s (Gann and Duignan, 1978: 113).*

This aptly showed that the colonial cantonment was a community of people with political, social and economic organisation. It was also laden with stratification and division of labour as men took on military duties, women engaged in domesticity, reproduction and compound garden.

Several works have already discussed the role of women in agriculture and economic production (Boserup, 1989; Brydon and Chant, 1989; Guyer, 2005; Ikpe, 1999; Larymore, 1911; Awe, 1973). These works have shown that African women were involved in agriculture, craft and industry, as well as trade and market. Despite the efforts of these scholars, some of the work have no historical underpinning and therefore lack periodisation. They also do not discuss the economic development of army wives from compound garden to a food society, which is the focus of this paper.

In the light of the foregoing, this study discusses the economic foundations of women in pre-colonial camp, followed by compound garden in colonial barracks, and the making of a food society in post-colonial barracks. The conclusion of the paper is a combination of various arguments,

findings, and recommendations.

### **The Economic Foundations of Women in Pre-Colonial Camp**

It is proper to begin this analysis from the past; this is to capture the salient and isolated events that shaped the involvements of wives of the Nigerian army in economic development. As one of the scholars would have us believe, “the writing of contemporary history sometimes requires going much further into the past than forty or fifty years ago... the objective is to penetrate the thinking of those who were implicated in the events of the past” (Ellis, 2002: 2-3). This section therefore provides a background study of women's involvement in agriculture in the pre-colonial times. It demonstrates that the role of women in food production started before the coming of the British.

For instance, compound gardens thrived in the pre-colonial society as an economic activity through which women produced food to complement the efforts of their husbands in the home, and it was in a bid to guarantee the security of farmers and inhabitants that some villages and towns were fortified and within those confines farming went on uninterrupted (Ogunremi, 1998: 337-348).

Two categories of women were involved in compound gardens during the period. They were the warriors' wives and female camp followers. For many, the essential question is, what is a compound garden and to what extent did women engage in food production? A compound garden refers to a farm located around the house. It varies from about two to four hectares depending on the size of the household especially the number of wives it harbours. Unlike European gardens, it is not full of flowers but of diverse food crops and perennial tree crops of economic, medicinal and nutritional values (Ikpe, 2004: 95-118).

A compound garden was also different in the sense that it was used for intensive cultivation of a mixture of perennial economic trees and arable crops, which was not so in other farms. Therefore, it is understood that a compound garden was usually a small farm located around living quarters and the vegetables and perennial tree crops were mainly for domestic consumption. Also, its benefit equally lies in the fact that the garden was privately owned by women even though its crops served the purpose of everyone.

During the Yoruba warfare, women and children cultivated arable lands for food production and also domesticated animals in a section of the garden for meat production and the surplus sold in the market. Some of the animals included goats, sheep, ram, and cattle, as well as fowls. For instance, in the nineteenth century Ibadan, Madam Efunseyitan was known to have had over 2000 slaves who worked on her farm. It was her role in the economy that

enhanced her wealth and popularity to the extent that Momoh Latoosa, the *Aare-Ona-Kakanfo* of Ibadan, regarded her as the greatest rival in Ibadan politics (Ogunremi, 1998: 341).

Similarly, Madam Tinubu of Egbaland was reputed for her prowess in trade and also had a retinue of slaves that worked for her (Ogunremi, 1988: 340). It was her influence and concern for her people that endeared her to them in the Dahomey/Egba War of 1851. Historians recalled that she mobilized her slaves and Egba women in the supply of food and water, and also contributed to the rebuilding of walls (Akinjogbin, 1981: 314-331). The essence of the illustration is to show that women in traditional military camps were actively involved in the socio-economic activities of the camps.

By the 1850s, barely twenty years of Ibadan's existence, its population was put at 60,000 to 100,000, making it the fastest growing city in Yorubaland (Awe, 1973: 68). And as it expanded due to the influx of refugees from neighbouring villages, land use began to shrink giving way to distant farms. Their farms were of two types; (1) *Oko Etile* farms, which were just outside the town walls and were worked by daily commuters from Ibadan town, and (2) *Oko Egan*, those which were far away, and were really farm villages, which eventually became permanent settlements in their own right; this latter type of farm was colonised by a labour force made up of women, children and large members of slaves (Awe, 1973: 69).

The question is what were the kinds of crops planted by women in the

farms located inside the camps? In most compound gardens and farms, women planted maize, yams, cocoyam, cotton, cassava, beans and other crops. This made Ibadan in the last quarter of the nineteenth century a food producer and also an exporter of food to her neighbours (Akintoye, 1980:55-65). The benefit of compound gardens was immense because they gave women food security and a means of generating income. Nevertheless, the challenges of compound gardens centred on land shortages, the use of simple farms tools, and the prevalence of warfare. It is clear from the above discussion that women were actively involved in gardening despite the prevalence of war, complementing the efforts of men and supporting the household.

### **Compound Gardens in Colonial Barracks**

The colonial policy on food production was dictated by the need to guarantee food security for soldiers and the people connected to the colonial enterprise. Food security means a condition related to the supply of food, and individuals' access to it. The United Nations World Food Programme emphasised that people are considered food secure when they have availability and adequate access at all times to sufficient, safe, nutritious food to maintain a healthy and active life. It centred on a combination of food availability, food access, and food utilization (*Daily Post*, March 16, 2018: 2-3). "On the other hand, a food system is composed of production, distribution, access, consumption and disposal. It also ensures that everyone is able to get

enough healthy food. Though, this is not always the case because records have shown that the inability of the Colonial Office to develop a sustainable food security for its soldiers contributed to a number of problems in the early years of colonial administration.

First was poor quality food which led to desertion of troops as fresh food was mostly not available, so diet had to be supplemented by tinned provisions, usually packed in chop-boxes (Haywood and Clarke, 1964: 38). Second was the exclusion of women in the cantonments which caused homesickness and desertion of troops (Burns, 1949: 41-43). Poor quality food in the organisation brought about malnutrition of local soldiers and British officers, some of whom were invalided to Britain and others recommended for a change of weather. On the part of local troops, some suffered homesickness and diseases as rotten grains and yams were part of their diet. This is revealed in the writings of a British officer in colonial Nigeria. According to him, "during the eleven months of my stay in Agbor, I lived on tinned food almost exclusively, there were practically no fresh vegetables, no bread or fish, and meat was a great rarity" (Haywood and Clarke, 1964:317).

Also writing on the same matter, another officer explained that poor food and bad housing added to the effect of a trying climate, especially in West Africa, and necessitated frequent leave; with a consequential increase of staff to maintain the actual minimum for duty, and disproportionately large medical staff was required (Lugard, 1922:141).



The effect of poor quality food as recounted by the two colonial officers showed that the absence of quality food was a huge challenge in the early years of colonial administration and there was no immediate remedy because of conquest.

In the years between 1898 and 1904, the indifference of colonial authorities on poor quality food, once again caused desertion of troops in the Gold-Coast Regiment of whom the Yoruba and the Mendere were in the majority (Wilkinson Report, 1905). To curb this trend, a committee was set up, and the report noted that yams, the staple food of the Yoruba, were limited in quantity in Asante, while the Mende from Sierra Leone could not obtain enough rice except when the government sold damaged rice from its store in Kumasi.

As a remedy, the committee recommended that every effort be made to encourage wives to join their husbands in the colonies and captured deserters be subjected to severe corporal punishment since they would forget their drill if imprisoned (Ukpabi, 1975:101). With the coming of women into the cantonments in 1905, they began to cultivate compound gardens to produce variety of crops and perennial fruit trees that would supplement tinned food and curb malnutrition in the system. Traditional military camps of the nineteenth century were not so, and they did not experience food shortages because of the wisdom of warriors in 1850 who forced their combatants to engage in agriculture for food security as against the practice of raiding villages and towns for food (Awe. 1973:65-77).

Food production on the part of European and indigenous soldiers' wives was a necessity. First was the effect of loneliness in the early years of the community, and second was the urgency to improve the nutrition of their military-husbands that were mainly tinned food. Consequently, in 1906 Flora Lugard wrote to Joseph Chamberlain, the Colonial Secretary saying, "I have begun today to organise some little improvements in Government House garden, which is at present merely a cleared enclosure. I am glad to say that Fred found the little dinners we have given since we arrived here better than anything he has ever had in Nigeria" (Flora Lugard, quoted in Perham, 1960: 77:78). Another colonial officer also observed that "improvement in the quality of food in the tropics was a matter of great importance for health and efficiency. Meat was generally tough and tasteless and like tinned foods deficient in nutritive qualities, while vegetables and fruit except banana are rarely procurable" (Lugard, 1922:150). The views of the two colonial crusaders were quite informative and they justified the factors behind the desertion of troops as noted above. Therefore, the question is where did army wives practice their gardening?

As is the case with most barracks, farming activities were allowed but restricted to the undeveloped outskirts of the Cantonment. A few animals were raised, and these included livestock, poultry, and pigs. Seasonal crops cultivated included maize, sorghum, millet, okro, groundnut and cowpea

(Appall and Adeniyi, 1993: 62-68). In most barracks in southern Nigeria, women planted cassava, beans, potatoes, yams, leafy vegetables, and bitter leaf, to mention but a few. The fruit trees included oranges, guava, pineapples, apple, mangoes, and banana. This corroborates the view of Ester Boserup that "Africa is the region of female farming par excellence, nearly all the tasks connected with food production continue to be left to women" (Boserup, 1989:6).

A striking feature of compound garden in colonial years was the independence of women's labour, not only in the content of the garden but also in the management and utilization of resources. Nevertheless, the economic development of women was gradual but steady because land was surplus particularly in Lokoja, Zungeru, Kaduna and Lagos Cantonments (Burns, 1949: 102). While indigenous soldiers' wives engaged in the cultivation of fruit trees and food crops, European wives participated in the cultivation of flowers such as hibiscus, freesia, agapanthus, roses, zinnias, sunflowers, marigolds, cannas, and balsams, among others (Larymore, 1911:237).

The value of flowers to European wives cannot be over emphasised. This is because they were used for the beautification of Government House, living quarters, corridors, and decoration of tables. In the memoir of a Resident's wife, she said, "I brought from Sierra Leone to Lokoja Barracks twenty seeds of *clitoria*, the beautiful sapphire blue pea, a tiny packet of *Ipomea aquamoclit*, the

white moon-flower, the pink *Corallita (antigonum)* and a few of the brilliant scarlet miniature *convolvulus*" (Larymore, 1911:237).

Other flowers introduced into Bida Cantonment from Malta included, a mauve climbing pea, with charming bronze foliage, *thunbergia* and *amaryllis*. The descendants of these crops, according to records, are now spread all over the country, so much so, that they have often been mentioned as growing wild (Larymore, 1911: 212). A colonial officer in Lagos said, "we were the first occupants of this house and my wife succeeded in making the garden a thing of beauty. We planted many fruit trees, but, as has happened to so many colonial officials, we left Nigeria before any of them had borne; as it has been little consolation to hear from men who have since occupied the house that the fruit was plentiful and delicious" (Burns, 1949:102). In successive years, the varieties of flowers planted by European wives spread to different parts of the country where they became medicinal ingredients for the local people.

They were also involved in the domestication of animals such as ponies, sheep, fowls, goats, and other domestic animals. European wives also introduced dogs and cats into the barracks, some of which were imported from Liverpool, Sierra Leone, and India (Larymore, 1911: 218-220). From the above, it is clear that European wives and their local counterparts played considerable roles in compound gardens and set an example in the system, especially in food and animal production.



The planting of fruit trees in the barracks was equally given a boost by the colonial authorities. It was to improve food security in Northern Nigeria caused by overgrazing, drought and desertification (Ikpe, 2003, 216-237). For this reason, government began to encourage the people to plant more fruits and vegetables, seedlings of budded mango, orange, lime, and guava. These fruit trees were issued to every household, including army wives with instructions on how best to plant and tend the trees (Watts, 1983:73-79). Some of the fruit trees in the barracks included: *Eucalyptus*, *Jacaranda Mimosifolia*, *Gmelina*, *Citrus species*, *Carica papaya*, and *Mangifera indica*. Others are: *Delonix regia*, *Pinus caribaea*, *Azadirachta indica*, *Khaya Senegalensis*, *Newbouldia leavis*, *Psidium guajava* etcetera, and numerous flower species (Mallo, 1993:43-53). These fruit trees offered food security not only to the barracks inhabitants, but also to the neighbours in the outlying villages. The challenges of compound gardens in colonial period included, use of simple implements, lack of loans, and indifference on the part of the local women to use fertilizers as the lands were considered fertile.

Animal husbandry was also affected during the period. Some of them could not survive the tropical climate and weather, coupled with the prevalence of tsetse fly, hence, the complaint of some European wives, that West Africa was not a healthy region for English dogs was only too sadly certain, but it was equally certain that they will continue to come as long

as Englishmen do (Larymore, 1911: 218). It is clear from the above analysis that army wives were involved in food production and animal husbandry in colonial barracks, and contributed immensely to food security, and this culture has continued in post-colonial barracks.

### **The Making of a Food Society in Post-Colonial Barracks**

This section underscores the economic transformation of army wives from compound gardens to a food society in post-colonial barracks. It noted that compound gardens continued after independence but gradually transformed into large scale farming in the 1980s as a result of the campaign of the United Nations Decade for Women, 1975-1985 and the Nigerian Army Officers' Wives Association (NAOWA), and the Better Life Programme for Rural Women (BLPRW) under the auspices of Maryam Babangida.

Following the departure of European wives immediately after independence, women in the barracks sustained the culture of compound gardens and animal husbandry because of food security. However, between 1967 and 1970 compound gardens in Nigerian barracks were affected by the Nigerian Civil War. The crisis had major impact on food production and human lives, consequently women assumed new roles in the war years, similar to their contributions in the Second World War. During the period, some of them worked as adjunct security operatives in the barracks, a few engaged in humanitarian services,

and others in supportive roles in the trenches where they cooked for their soldier-husbands and provided sex entertainment (Nzekwue, 2019).

In the words of an informant, 'I could not leave my husband alone, so I followed him from Benin where we met to Asaba barracks with other women. There were also women who joined us because of food and safety and they had children for them' (Okpaku, 2019). Another informant confessed to this author that women gave their husbands the needed spirit to fight the war even though majority of them came to the trench to prevent their spouses from sexual relationships with other women (Ogbe, 2019). By 1970 when the war ended, Nigeria was at the verge of food crisis, aggravated by the droughts of the early 1970s, which affected northern Nigeria where most of the barracks were located (Ikpe, 2003:226).

The challenges of food production became worrisome in post-war years that it gained headlines in a number of newspapers (*The Daily Express* July 4, 1971; *The Daily Times* February 24, 1971; and *The Sunday Times* June 4, 1971), to mention but a few. The question therefore is what was the reaction of Government to these reports? First, the government of the day had no alternative but to embark on food diplomacy across Europe and after a lot of politicking and engagement; international agencies came to the conclusion that Nigeria needed relief and humanitarian aid. Consequently, there was an inflow of European foods in Nigerian markets, as well as essential commodities (Ikpe, 2003: 222). But little did the government know that they

were making the country a dumping ground for foreign goods and draining the scarce foreign exchange, the effect of which was seen in successive years.

In 1973, the Federal Government of Nigeria launched the National Accelerated Food Production Programme (NAFPP) as a solution to food shortages and thus staple food crops such as rice, guinea corn, millet, wheat, cassava and others received the necessary boost (Nzemeka, 2015:309). Yet, Nigeria was still yearning for food security for her people due to the failure of a sustainable food production and the lack of political will.

On May 21, 1976, General Olusegun Obasanjo (rtd.) launched "Operation Feed the Nation" (OFN) in Dodan Barracks, Lagos and the aim of the programme was to make the nation self-sufficient in basic food production (Ojiako, n.d:160). He therefore encouraged institutions, colleges, universities and the armed forces to endeavour to grow part, if not all of their own foods, and at the same time called on traditional rulers and individuals to start farming even in their little backyard where they could grow vegetables or keep poultry (Ojiako, n.d:161). It was this initiative that gradually transformed the character of compound gardens to farming in most barracks.

In the years under review, three critical issues militated against Nigeria's food question. Apart from the Nigerian Civil War, there was also a glut of oil on the world market between 1979 and 1983, which caused oil dependent nations to experience economic disequilibrium. Connected to

this, was the crash of Nigerian currency against major currencies of the world, in addition to the endemic corruption of the military junta and their prolonged transition programme in the country. The flagrant waste of the country's resources led to infrastructure decay, brain drain, prostitution and other social vices. Thus, perceptive observers and informed commentators are agreed that the failure of such common services as infrastructure, electricity, telecommunication services and others has contributed largely to the decline in industrial output, the retrenchment of staff, leading to unemployment, and, the high crime rate (Olukaju, 2003:18-23).

By 1979 military authorities had increased its campaign on food production in the barracks and the nation as a whole. Though, this was an attempt in the right direction but it did not achieve desired results owing to lack of loans and effective government support to farmers and food production. With the coming of Shehu Shagari administration, Green Revolution Programme was introduced in the country. Its agenda was primarily food production and food sustainability.

In the light of these programmes, army wives got approval to use undeveloped plots of land in the barracks for farming. Thus farming activities began progressively in major cantonments in Nigeria (Apall and Adeniyi, 1993: 62). Other women who were unable to procure arable lands in the barracks began to lease farmlands from traditional rulers and land speculators in neighbouring villages. This period marked the development of

female farming and the beginning of a food society in Nigerian barracks. Between 1985 and 1993 remarkable progress had been made by female farmers in most Nigerian barracks. This was attributed to the empowerment programmes of the Nigerian Army Officers' Wives Association (NAOWA) which brought opportunity for army wives to learn new farm techniques, craft and industry, production and manufacturing.

The association also helped the women obtain loans in various aspects of economic productivity and engaging them through cooperative societies. This project was simultaneously carried out by the Nigerian Air Force Officers' Wives Association (NAFOWA) and its sister organisation, the Navy Officers' Wives Association (NOWA). Through the assistance of the women's associations, workshops and seminars were organised for army wives in various barracks. The role of Peoples' Bank Plc cannot be overlooked; it advanced loans to army wives through cooperatives which they repaid over time. These incentives helped women improve crop production and also brought technical knowhow. Therefore, the Minister of Women Affairs and Social Development, Mrs. Salamatu Suleiman, encouraged army wives to form groups and qualify for loans (*SOJA Magazine*, 2009:76-77). Other opportunities included Women's Fund for Economic Empowerment (WOFEE), and Business Development Fund for Women (BUDFOW), which could be accessed by the women (*SOJA Magazine*, 2009:76-77). Surprisingly, from then on, the Federal Ministry of

Women Affairs and Social Development began to collaborate with Army Wives' Associations in the aspect of loans.

These incentives, to a greater extent, helped female farmers engage in distance farming. They leased arable land from outlying villages and civilian landowners instead of scrambling for spaces in the barracks. Because of the advantage of loan, capacity building and availability of land, there were improved crop yields year after year. In addition, women began to use fertilizers, modern farm techniques, and hired labour, as a result of knowledge acquired from workshops and seminars in the barracks. It was not quite long female farmers began to specialise in leafy vegetable production, mono-cropping, mixed farming, livestock production, and poultry. The lesson derived from improved farming technique was the transfer of knowledge to neighbours and hired servants, as well as abundant harvest, which increased their earnings.

Since the 1990s, the Nigerian barracks had become a food society where female farmers engaged in farming and livestock production. Birds were also managed in poultry system with feeds and treated water as against the traditional practice of wandering, and frequent attacks of hawks and snakes, including flood. At the same time, management of animal husbandry was left in the hands of scientific officers and veterinary doctors. Another factor was the introduction of scientific seedlings from research institutes. For this purpose, demonstration centres were established, as well as nurseries

for the distribution of seedlings.

Nigerian barracks where intensive farming was practised included Awkunanu Barracks, Enugu, Ojo Barracks, Lagos, Air Force Base, Makurdi, Benue State, Obinze Barracks and Owerinta Naval Base, Imo State, Odogbo Barracks, Ibadan, and others. One remarkable progress in the 1980s and 1990s was the use of agents who supplied seedlings from neighbouring villages - vegetable seeds, pumpkin seeds, curry seeds and bitter leaf stalk, cassava stem, yam seedlings and others. When junior soldiers (not senior officers) began to notice the economic influence of their wives, some of them began to assist in farm work to improve the fortunes of the home front. More importantly is the fact that women battering and concubinage got reduced in the barracks as soldiers were not ready to upset their wives because of their complementary roles.

Since the 1990s, some female farmers had started diversifying their economic activities into fish farming using plastic tanks and containers. Through this economic livelihood, fish farming became a popular business in the community, such that military training institutions like the Nigerian Armed Forces? Resettlement Centre, Oshodi, Lagos (NAFRC), Army Resettlement Centre, Ipaja, Lagos (ARC), and Air Force School, Makurdi have established agriculture as a course for retiring officers and men. It is clear from the analysis that women were agents of economic change and food security in Nigerian Barracks. Some of them have also sustained this achievement in contemporary times.

More importantly is the fact that images of army wives as indolent and incapable of directing affairs in the public and private spheres had been erased.

### **Conclusion**

The involvement of army wives in compound gardens in colonial period gradually brought about food availability in Nigerian Cantonments. The compound garden was a traditional means of making food available at all times. It was also a practical approach to the food security of army wives in Nigeria. The main reason why women engaged in compound garden and domestication of animals was to improve the nutrition of British officers and local soldiers since they depended largely on tinned provisions. Since independence, there has been a phenomenal change from compound garden to farming in Nigerian barracks. This is because of the concerted efforts of military government, NAOWA, BLRW and the support of Peoples' Bank Plc. Also the formation of cooperative societies and the cooperation of land owners around Awkunanu Cantonments, Enugu, Obinze Barracks, Odogbo Barracks, Ibadan and Ojo Cantonment, Lagos had helped in the development of female farming in Nigerian barracks. It was a combination of these factors that led to the development of female farming in the barracks.

The economic change brought with it the scientific method of farming; livestock production and fish farming,

which helped in the making of a food society, were also encouraged. With the evolution of a food society, trade and market also developed, as civilian neighbours began to transact business with army wives, and the money earned was deployed into other ventures while awaiting another farming season. These women succeeded because of gender division of labour in the system which assigned military duties to men and women domesticity and economic livelihood.

Finally, this article established that the Colonial Office made a fundamental mistake by excluding women in the early years of the cantonment on excuses of gender and sex. This act caused malnutrition and homesickness as well as desertion of troops. It denied soldiers the support of women and a sustainable food security, compared to modern barracks that have become a food society due to food availability, food security, and the making of female farmers in the organisation. The study affirmed that the position of women in the social system cannot be overlooked, particularly the barracks organisation because of their multiple roles. Since the 1980s and 1990s the economic activities of army wives had increased and wife battering and divorce reduced because of the economic power and complementary roles of women. Therefore, it is recommended that government needs to understudy the economic organisation of these women as well as empower them for greater output.



## BIBLIOGRAPHY

**Akinjogbin, A.I. (1981)**“

Dahomey and Yoruba in the Nineteenth Century,” in J.F. Ade Ajayi and Espie, I. (ed.). *A Thousand Years of West African History*. Ikeja: Thomas Nelson and Sons Ltd. 314-331.

**Akintoye, S.A. (1980)**

“The Economic Foundation of Ibadan's Power in the Nineteenth Century,” in Akinjogbin, I.A. and Osoba, S.O.(eds.) *Topics on Nigerian Economic and Social History*. Ile-Ife: University of Ife Press Ltd. 55-65.

**Alan, B. (1949).**

*Colonial Civil Servant*. London: George Allen and Unwin Ltd. 41-43.

**Apall, J. and Adeniyi. C.A. (1993).**

“A Preliminary List of the Rhizosphere Mycoflora Associated with Crops Cultivated in Farmlands Within the Ribadu Military Cantonment, Kaduna, Nigeria,” *Nigerian Defence Academy Journal* 3, (1) 62-68.

**Awe, B. (1973).**

“Militarism and Economic Development in Nineteenth Century Yoruba Country: The Ibadan Example.” *Journal of African History*, xiv (1) 65-77.

**Babangida, M. (1988).**

*The Home Front: Nigeria Army Officers and their Wives*. Ibadan: Fountain Publications Ltd. 63-68

**Boserup, E. (1989)**

*Woman's Role in Economic Development*. London: Earthscan Publications Ltd.

**Brydon, L. and Chant. S. (1989).**

*Women in the Third World, Gender Issues in Rural and Urban Areas*. England: Edward Elgar Publishing Ltd.

**Callaway, H. (1987).**

*Gender, Culture and Empire, European Women in Colonial Nigeria* Oxford London: Macmillan Press Ltd. 166-167.

**Ejiro Okpaku, (2019).**

In a discussion with the Author, (ex-soldier's wife. 85 years Ibusa. Delta State)

**Ellis, S. (2002)**

“Writing Histories of Contemporary Africa,” *The Journal of African History* 43, (1) 2-3.

“Form Groups, Qualify for Loans...Minister tells barracks women, others,” 2009. *New SOJA Magazine*, A Publication of the Nigerian Army. 2<sup>nd</sup>-3<sup>rd</sup> Quarter. 76-77.

**Gann, L.H. and Duignan. P. (1978).**

*The Rulers of British Africa 1870- 1914*. London: Croom Helm. 113.

**Guyer, I. J (2005).**

“Female Farming in Anthropology and African History,” in Andrea Cornwall (ed.) *Readings in Gender in Africa*. London: International African Institute, School of Oriental and African Studies. 103-111.

**Haywood, A. and Clarke. F.A.S. (1964).**

*The History of the Royal West African Frontier Force* Aldershot Gale: Polden Ltd. 33.

Human Resources Development Division, United Nations Economic Commission f

or Africa. (1972).

Women: “The Neglected Human Resource for African Development,” *Canadian Journal of African Studies*, VI (ii), (1972), 359-370.

- Ikpe, E. B. (2004).**  
 "Compound Gardens in Ibibio Food Culture and Economy 1850-2000," *Lagos Historical Review*, 4, 95-118.
- (1999).**  
 "Food Economy and Food Culture in the Benin Empire," in *Journal of African Philosophy and Studies* 2, (3) 107-123.
- (2003).**  
 "Food Politics and Diplomacy in Nigeria in the 20<sup>th</sup> Century," in Yomi Akinyeye(ed.) *Nigeria and the Wider World in the 20<sup>th</sup> Century, Essays in Honour of Professor Akinjide Osuntokun*. Ibadan: Davidson Press Ltd. 216-237.
- Kirk-Greene, A.H.M (1964).**  
 "A Preliminary Note on New Sources for Nigerian Military History," *Journal of the Historical Society of Nigeria*, Vol.3, (1) 129-147.
- Larymore, C. (1911).**  
*A Resident's Wife in Nigeria*. London: George Routledge and Sons Ltd.
- Lufadeju, S. (1987)**  
 "Rural Women on the Move, Abuja Workshop calls for Better Life for Women, " *Newswatch Magazine*, September 28, 1987, 25.
- LUGARD, F.D. (1922)**  
*The Dual Mandate in British Tropical Africa*. Edinburgh and London: William Blackwood and Sons Ltd. 150.
- Nzekwue, N.(2019).**  
 In a discussion with the Author (Ex-soldier's wife, 91 years.Ibusa.Delta State).
- Nzemeka, J.A.(2015)**  
 "Wives Of Military Personnel in Nigerian Barracks, 1905-1999: A Socio-Economic History," Unpublished Ph.D Thesis, University of Lagos. 309.
- Ogunremi, D.(1998).**  
 "Economic Development and Warfare in 19<sup>th</sup> Century Yorubaland," in Adeagbo Akinjogbin(ed.) *War and Peace in Yorubaland 1793-1893*. Ibadan: Heinemann Educational Books Nigeria Plc.337-348.
- Ojiako, J.O. (n.d.)**  
*13 Years of Military Rule 1966-79 Lagos: Daily Times Publication*. 160.
- Okoye, P.U. (1993).**  
*The Better Life Programme Meteor or Monument*.Africana-FEP Publishers Ltd. 34.
- Ogbe, G.(2019).**  
 In a discussion with the Author (retired soldier. 90 years. Asaba, Delta State).
- Olukoju, A. (2003).**  
 "Prioritising Infrastructure Development in Nigeria: Challenges, Constraints and Prospects" *NESG Economic Indicators*. July-September, 18-23.
- Perham, M.(1960).**  
*LUGARD, The Years of Authority 1898-1945*. London: Collins St James Place.77-78.  
*The Sunday Times* June 4, 1971,
- 1Ukpabi, S.C. (1975).**  
 "Military Recruitment and Social Mobility in Nineteenth Century British West Africa," *Journal of African Studies*, 2 (1) 87-107.
- Watts, M. (1983).**  
 "The Political Economy of Climatic Hazards, A Village Perspective on Drought and Peasant Economy in a Semi-Arid Region of West Africa," in *Cahier d'Etudes Africaines*, xxiii (I&2), 73-79.
- "Wilkinson Report on Desertion in the Gold Coast Regiment," 1905, encl.2, CO 445/192.

# EFFECTS OF ELECTRONIC MEDIA ON ADOLESCENTS' ATTITUDES TO PRE-MARITAL SEX IN NIGERIA: ADVOCACY FOR RELIGIOUS ETHICS AS PANACEA

Segun Ayotunde Olulowo, PhD and Rev. Akinwunmi Timothy Akinola.

Department of Religious Studies,

Faculty of Arts

Olabisi Onabanjo University

Ago-Iwoye, Ogun State.

Tel. +234-8035267441, +234-8098539478

Email: segunolulowo@yahoo.com

## Abstract

*Our world is changing; it epitomises new discoveries in scientific advancement. The 21<sup>st</sup> century has witnessed great innovation in media technology which has brought changes to people's lives and gave them the freedom of performing several activities from the comfort of their homes and offices. Research has shown that scientific advancement is responsible for high sexual immorality among adolescents. The paper investigates the merits and demerits of media technology, probes how teenagers abuse electronic media use and the strategies Churches can engage to curb the misuse of the electronic media among Christian adolescents. It reveals that electronic media enables a two way communication among teenagers across the globe; it is an educational tool to learn about almost anything. To share information through internet is easy, cheap and fast. It has changed our economy and social lives with an interesting boost in the music industry. On the contrary, electronic media also exposes teenagers to the risk of deception, access to pornography, obscenities, drug abuse and addiction, violence behaviours, online sexual practices and depression. It concludes that teenagers by nature are susceptible to abusing the use of any media. The usages of cell phone during worship service for other purposes other than worship are common among teenagers. The paper is advocating for: Christian sexual education by exposing adolescents to ethical values of the Bible, the commitment of the church to teenagers' unswerving spiritual growth and recommends that teenagers' parents should upgrade their knowledge to keep a tap on their teenage children's activities on different media gadgets through the usage of tools that are designed to combat abuse of electronic media.*

**Key Words:** Electronic-Media, Premarital-sex, Adolescents-Attitudes and Biblical-Ethics

## Introduction

Technological development orchestrated by globalisation and civilisation has attenuated and grossly affected our moral ethos. This has brought about a breakdown of the social structure on which society rests (Ehrman, 1959; Amstrong, 1972 and Obasola, 2015). It was responsible for Sexual revolution; it was through sexual revolution that sex became glorified and commercialised. This

sexual revolution has deeply impacted negatively on Nigerian cultures. The developing technology has a strong force especially teenagers as they are susceptible to change. It is observed that teens tend to be more hasty than adult, and they may not think as clearly as adults about the consequences of what they do. Most common media technologies that have influenced teenagers' lives today for instance are: Internet, Television, Cell Phones,



Gaming, Music and Print Media. With the information age exploding through television, music videos, video games and the Internet, there is growing concern about whether teenagers' exposure to sexual content from media sources may have effects on adolescents' sexual behaviours and attitudes. While newer media sources such as the Internet remain largely unstudied, there is a small body of literature linking sexual messages through television and teenagers' sexual behaviours and attitude (Grant, 2014).

Akinwumi (2017) noted that, today, we are living in a revolutionary world where there are several bombardments of new inventions around the globe, more especially media technology. Media technology most especially cell phones have brought about changes in the lives of people giving them the freedom to performing several activities from the convenient and the comfort of their homes and offices. Media technology, for example, has made communication easier and quicker, it now takes few seconds to transfer a document to anywhere in the world compared to regular mail which takes several days with the involvement of several individuals before it could reach its destination. He noted further that, there was a time in Nigeria when people that had their relatives abroad would usually queue in Nigeria Telecommunication Limited (NITEL) for hours or days before they could have access to speak with their loved ones. But the reverse is the case now, as a result of the current

blessings that Information Communication Technology (ICT) and Media have come to offer. A close examination of the way Nigerians live currently is a reflection of the effect of media and technology, such as television, telephones, computers, laptops, cell phones, text messages, electronic mail, internet, electronic books, making booking or transacting businesses online, online education, online gaming and much more. Teenagers all over the world are growing up in a world, where the internet, cell phones, text messaging and other technology dominate the communication and it is an integral part of everyday life. If we ask a question whether media technology is good or bad, Akinwumi argues that whatever it is used for makes it either good or bad. For technology is a double edge sword; it can be used for good purposes or for bad purposes.

Despite the positive effects of media technology such as television, telephone, radio, internet and the numerous blessings they have brought to humanity they are still responsible for the prevalence of high sexual immorality among the young adults. Thus this paper was designed to guide teenagers against the abuse of social media and also to synergize the efforts of the church and the parents towards curbing the impact of social media in the prevalence of sexual immorality among the teenagers. It is in the light of the above mentioned effect that information technology can wield on adolescents' attitude towards initiation

of early coital debut that this paper is to bring to fore the consequent effects of information technology on adolescents attitudes to sex and advocate for Biblical ethics as a way out. This paper thus answers the following questions:

1. What are the positives and negatives effects of the Electronic media on Christian teenagers?
2. What are the ways can Christian teenagers' abuse Electronic media?
3. What are the strategies that Churches can put in place to curb the abuse of the electronic media among Christian adolescents?

### **Conceptual Framework Electronic-Media:**

It is the means of communication that is driven by devices such as transistors or valves, in which electrons are conducted through a semiconductor. It involves transmission of information by electronic system. For the purpose of this study, electronic media shall be taken to mean information or data that is created, distributed and accessed using a form of electronics. The common equipment's being used to access electronic media are television, radio, computer, and cell phones.

World Health Organisation defines adolescents as people between the ages of 10 and 19 years. Adolescence is identical with puberty, it comes from the Latin word "pubertas", meaning adult. The term 'adolescence' evolves from the Latin verb 'adolescere' which is interpreted to mean "to grow into maturity", or to "grow up". Another name for *Adolescence* is *teenager* because of the age bracket of 13 - 19

years, which they fall into. It is the period which terminates childhood and marks the commencement of adulthood. Adolescents constituted around 20% of global population and the figure is slightly more in Nigeria, Adepoju (2005) affirmed that teens/ youth who are within the ages of 10 and 24 years constitute 36.7% of the Nigerian population and are found to be highly vulnerable to antisocial behaviours such as violence, crime, unsafe sexual activities, drug abuse, among others. Amao-Kehinde (2008) noted that, the adolescents form the bulk of pupils; a would-be teacher hopes to meet and teach in the secondary school. She noted that as a result of the technological advancement of today, they have been seen to be very difficult to manage because of the great transformation which they are confronted with, during this developmental stage. She observed that many parents and teachers who relate with them have a lot of conflicts with them because they fail to understand that adolescents perceive themselves as adults and desire some degree of freedom.

**Premarital-sex:** The term premarital sex was used instead of fornication due to the negative connotations of the latter. The meaning has since changed; referring to all sexual relations a person has prior to marriage. Thus, the definition of premarital sex has a degree of ambiguity. It is not clear whether it refers to sex between individuals legally forbidden from marrying, or the sexual relations of one uninterested in marrying. Alternative terms for pre-

marital sex have been suggested; non-marital sex (which overlaps with adultery), youthful sex, adolescent sex, and young-adult sex. These terms also suffer from a degree of ambiguity, as the definition of having sex differs from person to person (Olulowo, 2017). Historically, premarital sex has been regarded as a taboo in some cultures and religions. The significance of premarital sex has traditionally been related to the concept of virginity. It refers to more than one occasion of sexual activity or more than one sex partner. There are cultural differences as to whether and in which circumstances premarital sex is socially acceptable or tolerated.

**Adolescents-Attitudes to Premarital sex:** Pre-marital sex is an act of deviation. A deviant act is used here to refer to departure from societal norms that attract social disapproval which is likely to elicit negative sanctions. When students of different ages, nationalities, ethnic and religious backgrounds and status are brought together in a higher institutions environment, opportunities exist for sexual relationship. Pre-marital sex is a violation of sexual norms and values of a society. According to Bell and Chaskes (1970), Kaats and Davis (1970), Mosher and Cross (1971), the attitudes of modern youths towards premarital sexual activities have become more liberal and permissive than what it was in the past. Hence Meyerson, (1975) stated that adolescents sexuality reveals a moving kaleidoscope of colourful feelings and changes that can be exciting and frightening, pleasurable and painful,

joyous and sad, loving and hating. Conger (1961:52) stated that “of all the developmental events of adolescence, the most dramatic is the increase in sexual drive and the new and often mysterious feelings and thoughts that accompany it”. As a result of the adolescents' dramatic liberalization in premarital sexual attitudes, Wagner (1980) was highly worried when he compared it with the standard behaviour.

From the foregoing, social attitudes to premarital sex have changed over time. It includes issues such as virginity, sexual morality, unplanned pregnancy, legitimacy and other issues. It may take place in a number of situations. For example, it may take place as casual sex. For example, with at least one participant seeking to experience sex; it may take place between a couple living together in a long-term relationship without marriage; for a betrothed couple engaging in sexual activity before their anticipated marriage etc. Even though premarital sex was somewhat condoned, having a child outside of wedlock was not. If a pregnancy resulted from premarital sex, the young couples were expected to marry immediately.

**Biblical-Ethics:** A Christian from Biblical view is a person who is wholly dependent upon God and cannot achieve goodness by means of will or intelligence but only with the help of God's grace (Microsoft Encarta). Therefore the Bible ethics could be seen as the ability to love God and man and for one to do to others

what one would want them to do for him / her by the help of God. In other words, Biblical ethics means pleasing God first, others second before you, the biblical ethics is summarized in the Jewish law “you shall love the Lord your God with all your heart, and with all your Soul, and with your entire mind; and love your neighbour as yourself (Luke 10:27).

### **Theoretical Framework**

This study hinges on Social Information Processing Theory. **Social information processing theory**, also known as **SIP**, is an interpersonal communication theory and media studies theory developed in 1992 by Joseph Walther. Social information processing theories explains online interpersonal communication without nonverbal cues and develops and manages relationships in a computer-mediated environment. While the term has traditionally referred to those communications that occur via computer-mediated formats (e.g., instant messages, e-mails, chat rooms), it has also been applied to other forms of text-based interaction such as text messaging (Joseph, 1992). In computer-mediated environments, interpersonal relationship development may require more time to develop than traditional face-to-face (FtF) relationships. Social information processing theory argues that online interpersonal relationships may demonstrate the same relational dimensions and qualities as FtF relationships (Olaniran, 2001).

These online relationships may help facilitate interactions that would not have occurred face-to-face due to factors such as geography and

intergroup anxiety. Social information processing theory focuses on the social processes that occur when two or more people are engaged in communication, similar to theories such as social presence theory, social penetration theory, and uncertainty reduction theory. What makes SIP different from these theories is its distinct focus on communication mediated solely by information and communications technologies. While other media theories exist, such as media richness theory and uses and gratifications theory, SIP specifically focuses on relationships entirely mediated online. This theory is relevant to this study for many teenagers have been duped, molested and insulted as they attempt to take the superficial relationship that started on the media to a deeper level with a person whose character and integrity have not been ascertain by them.

### **Prevalence of premarital sex among**

**Adolescents:** Premarital sex has been reported as being common among adolescents either in the secondary schools or in the Nigerian tertiary institutions in Nigeria (Alo, 2008). Corroborating this view, (Ayodele, 2011) carried out a research on the prevalence of premarital sex among adolescents in tertiary institutions. He pointed to the fact that premarital sex is a highly acceptable behaviour among university students. Eighty-six point five (86.5%) of the respondents see nothing wrong with sex before marriage. Cohabitation was adjudged to be one of the primary causes of premarital sex among students in the tertiary institution. Cohabitation with the opposite sex is an influencing factor to the initiation of sexual activities.

Several studies in Sub-Saharan Africa have also documented high and increasing premarital sexual activities among adolescents (WHO, 2001). This is because western societies such as Europe and America that have experienced a radical change in their attitude towards sex had infiltrated African culture with their permissive attitude towards sex. Fatusi (2005) confirmed that adolescents in Nigeria have high sexual and reproductive health problems. Studies in reproductive health conducted by Zabin and Kiragu (1992) paid considerable attention to the commencement of sexual activities among adolescents. This is predicated on findings that the timing of first sexual intercourse is highly associated with the use of contraceptives, early pregnancy, pregnancy complications and exposure to Sexually Transmitted Diseases (STDs) and acquired Immune Syndrome (AIDS). There is an endemic spread of Sexually Transmitted Diseases such as Syphilis, Gonorrhea, Chlamydia, Venereal Warts, Cytomegalovirus, among the youth today, calls for sex education for the Christian youths.

### **What are the Positives Effects of the Electronic Media on teenagers?**

**1. The development of internet:** The development of internet was a major breach in electronic media technology. The internet, otherwise called International Network is a global collection of many different types of computers and computer networks that are connected together. Just as a telephone enables you to talk to someone on the other side of the world who has a phone, the internet enables a

person to exchange information with other computers and computer users anywhere in the world. The internet enables information to travel through many different interconnected computer networks (Owolabi, 2000). Chapman, (2010) in his work on teenagers and modern communication technology stated that one of the most observable things is that contemporary teenagers have grown up in a world of advanced technology. Livingstone and Brake, (2010) opined that one thing that is driving online and mobile communication is young people's strong desire to connect with their peers anywhere and anytime. They want to stay in touch, express themselves and share experiences. The opinions of Chapman (2010), Livingstone and Brake (2010) on the reason why teenagers spend so much time on their phones and internet revealed that, teenagers desire to connect with their friends anywhere and every time.

**2. Source of fun:** The electronic media and internet are fun, informative and are great sources of communication with others. They are an educational tool and users can learn about almost anything. Sharing information through internet is easy, cheap and fast. Teenagers have access to billions of websites containing information in the form of text, pictures and videos. Wilson, (2001) observed that by 1996, the personal computer was no longer a word processor; it has become an important form of communication. Andres Grove, the CEO of Intern Corporation made this startling comment:



*Personal computers would not be able to keep up their tremendous growth unless they could enhance and combine those features which consumers were already receiving from their television sets. The key was to recognize that the computer business was not just about building and selling PCs; it was about the delivery of information and life-like interactive experience (Wilson and Wilson, 2001).*

**3. Information Highway:** Campbell, Martin and Fabos, (2006) described internet as an information highway. It allows immediate two-way communication like radio and television between senders and receivers of media messages. By the late 1980s and early 1990s, online computer services and the internet had begun featuring all sorts of mass communication and marketing them through computers, modem and phones lines. Consequent upon this innovation, the internet grew rapidly, becoming the most wide range interactive mass medium in history. By 2004, about 945 million people worldwide had access to the internet regularly. Global internet access is expected to rise to 1.46 billion by 2007.

**4. Revolutionised our Economy and Social lives:** Commenting on the ground-breaking effect of Internet, (Sweet, 1999) observed that internet has revolutionised our economy and social lives, even more than our political structures. According to him, the World Wide Web is evolving faster than anyone can imagine. Sweet observed that the development process of papyrus roll into codex manuscript took over a couple of centuries while the

transition from a liner culture of the page to a webbed culture of the screen scroll is taking place almost overnight. Internet traffic is exploding. He pointed out that roughly 20 percent of the world's population is now using internet, which is almost 1.5 billion people. In order to justify his claim about the exponential growth of the internet, (Sweet, 1999) said it took thirty years for radio to gain fifty million domestic listeners; it took thirteen years for television and cable to gain fifty million domestic viewers; it took four years for the World Wide Web to gain fifty million domestic users. Campbell, Martin and Fabos, (2006) pointed out the uniqueness of internet which they believed caused it to be a distinct mass medium: it is very interactive in nature, it allows individuals to create and distribute their own messages and the fact that internet enables many traditional media to appear on computer screens.

**5. Change and Influences lifestyles:** The impact of television on the society has been profound. It has changed the lifestyles of those who watch it and it has become a major influence on people's culture. Momoh (1989) lent his own voice to what others have said



about the powerful influence of television in any society. He described it as a potent and versatile vehicle for information dissemination. With the advent of television, the spreading of information has become much more rapid and vivid, sensitizing several people to the realities of daily events. He pointed out that television came to Nigeria not quite long, just in 1959; however, it has become a household item today. Wilson and Streisand and Newman (2008) gave credence to the submission of Campbell, Martin and Fabos (2006), on the exponential growth of internet. They remarked that it is hard to remember that Google, Yahoo!, and MSN were barely on the radar screen a decade ago. At the initial stage, it was an exclusive right of the rich. They observed that today, more than half of U.S. household has high speed lines that allow them to easily access and download music and video from the web into an array of devices from laptop computers to cell phones and iPods. Streisand and Newman, (2008) pointed out that Google's courage appears boundless. Yahoo! wants to become an end-to-end media ecosystem. They will become the newspaper, radio station, television station and at the same time our communication provider. What Andrew Grove advocated for some years ago has become a reality today. A single electronic device is multi-tasking.

**6. Boost in Recording Industry:** Campbell, et. al. (2006) argued that development of MP3 technology was a

major revolution in the recording industry. MP3 which is a modern technology that compresses and squeezes music data into smaller files allows personal computer users to download music to their hard drive or mobile devices and play it back whenever they want. He did not border to emphasize the popularity of MP3 among teenagers. MP3 is a technological innovation that has gained wider audience among teenagers. It is not unusual to see many to see many teenagers with their earpiece on most of the time. An average mobile phone has facility which enables its user to load compressed music on it. Nirenberg, (2006) was very emphatic in his submission about the effects of internet. He summarized the effects in three forms:

- a) The incredible exchange of information globally, conveniently and instantaneously;
- b) The building partnerships and creating synergies with others; the creation of new realities that emanate from cyberspace. He submitted that with internet, we face a world of revolutionary change, viral growth and instant intimacy with people we may neversee.
- c) Finally, he said the impact of the internet is obvious, unavoidable and demanding of our adaptation.

#### **Negatives effects of the abuse of Electronic media on teenagers?**

Chapman (2010) also saw some degrees of dangers associated with the

electronic media. He observed that what we used to call the 'information super highway' has grown into a vast mobile web with both positive and negative influence upon the contemporary teenagers. A child left unguided by the adult is vulnerable to evil of electronic media. The tempting competence of television was vividly captured by Medinnus and Johnson (1969). Concerning teenagers and television, the duo pointed out that television never shut them off; it plays with them, shares its work with them, wants their attention, needs it, and goes to any length to get it.

**1. Distorted Views of Teenagers:** They concluded that television would likely produce a distorted view in teenagers.

**2. Promotes Violence:** There is the believed that violence on television is connected with violence and delinquency in real life. The impact of movies was also reflected in their work. They maintained that like other mass media, movies are not closely bound to reality. They pointed out that movies were once known as 'dream places' which confirmed the fact that most of what happen in movies are not real. In addition, they opined that some of the movies that teenagers would feel at home are those which teach crime and its techniques, violence and rebellion. Mone, (2012) maintained that teenagers who watch more than one hour of television a day are more likely to engage in violent or aggressive acts later in life. He hinged his point on the research study published in the Journal of Science. He added that researchers have uncovered an apparently direct

correlation between the amounts of time spent glued to the entertaining screen and the likelihood of subsequent misbehavior.

**3. The risk of deception:** He observed that misinformation and misrepresentation abound. Since internet is decentralized and individuals are allowed to create and distribute their own messages, internet users, especially teenagers should exercise restrain whenever they are browsing the internet.

**4. Access to Pornography and leads to practicing of online sex:** Cameron and Salazar, (2009) carried out a research work on the incidences of exposure to sexually explicit websites and its effects on teenagers. They discovered that most of the exposure occurred accidentally or unintentionally, through unsolicited e-mails that contain explicit content or links to explicit material (Lewis, Miller and Buchalter, 2009). They used data compiled from an online survey of more than 500 college students and they discovered that 72.8 percent of the sample group reported that they had viewed online pornography before the age of 18. Males were found to be more likely to view pornography and variety of images frequently while females were more likely to be involuntarily exposed to pornography. They cited (Greenfield, 2000) who studied the unintended exposure of young people to pornography through peer-to-peer file sharing networks concluded that evidence supports the thesis that pornography and sexualized material can influence the world values, sexual

activity, and sexual attitudes of children and youth.

**5. Cigarettes use and ways to make drugs:** electronic media exposes teenagers to several cyber atrocities including ways to making drugs and use of alcohol and cigarettes.

**6. Leads to depression:** The addiction to mass media portends dangers to the teenagers because it predisposes them to depression

**7. Some TV contents are mainly for Entertainment:** Medinnus and Johnson (1969) asserted that teenagers are in dire need of adult guidance since they are not mentally matured enough to discern what aspect is illusory. They should be assisted to know that some of the things being taught on the screen are meant for entertainment and not to be taken in. Any attempt to translate into the world of reality the events of the virtual world portends serious danger to teenagers.

**8. Reduce communications in Family:** It has been observed that television dominance as a household activity often reduces the level of communication among family members and as a result, much of the culture being disseminated to youngsters today comes from the tube rather than the family. Wilson and Wilson, (2001) discovered that television is heavily used in homes with children and it is believed that the average child has watched more than 18,000 hours of television by the time he or she clocks age 15. This compares with 11,000 hours of schooling and

3,000 hours of church attendance.

The survey was carried out among youngsters of ages 9-19. It was discovered that among those who use internet at least weekly, 57 percent had seen online pornography, 31 percent had seen violent, and 11 percent had seen racist content. Further 31 percent had received sexual comments online, 28 percent had been sent unsolicited sexual material and 8 percent had gone to a meeting with someone first met online (Livingstone and Bober, 2005). They could be lured into illicit drug, sexual immorality, or even be kidnapped. This survey never cares to caution online users, especially teenagers from responding to invitation to meet in real life people they met online. This researcher believes that it is wrong and dangerous for teenagers to agree to meet in real life people they met online.

### **Advocacy for Biblical Ethics**

Ross and Rosser's (1989) showed that sexuality education alone is unrelated to behavioural change in the absence of modification of attitudes. It is the intention of this paper to fill this omission by advocating Christian Sexual education in view of the power of the gospel to bring about behavioral change and modification of attitudes. Akanni (2013) described the words of God as comprehensive instrument for changing people's lives and transforming their attitudes. In the light of the power of God to change people's lives and attitude. Hill, (1985) warned the church not to make the development of reason its highest goal when dealing with teenagers. He maintained that rationality is not the summative quality

of human personhood. Hence, reason by itself will not produce the responsible person. He pointed out three principal things which the church cannot afford to miss as it ministers to teenagers: cultivation of attitudes of concern for the nurturing of children and teenagers, creation of learning environment where more mature leader and teacher can share experiences of their walk with God for the edification of all and focusing on imputation of understanding which animates conduct and enables us in complex situations to distinguish good from evil.

### **Conclusion**

The prevalence of premarital sex among adolescents in the society does not only affect them morally, it also reduces their fruitfulness to the barest minimum. It also makes it impossible for the society, to which they belong to be able to effectively help the situation of moral breakdown in their community. Socially, it has brought shame, disgrace and insult not only to the offenders but also to the society at large. The following conclusions could be generated from this paper: Teenagers by nature are susceptible to abusing the use of any media or information technology. The usages of cell phone during worship service for other purposes other than worship are common among teenagers because of several activities which are appealing to them that are obtainable on phones. There some activities which teenagers engage in on their phones which inherently are not evil but when they are done in wrong places or too much time is committed to them, they become evil. Abuse of electronic media among teenagers could become an

addiction. These become so evident when young adults spent a greater chunk of their energy and productive hours uncontrollably seeking pleasure rather than on productive and fruitful activities. For instance, teenagers spend more of their productive hours watching home videos, television, watching of pornography on the internet's, what happening and face bookings. People in this category will need the special touch of God because this is clear manifest of abuse which has escalated into addiction. The impact of electronic media according to him is noticeable, inevitable and demands adjustment by all the stakeholders on adolescents matter. Therefore, the church as an important stakeholder must be alive to her responsibility in growing the faith of adolescents so that they will not become one with the world. The paper also concur that the abuse of electronic media among teenagers is partially as a result of peer influence. Some teenagers have confessed that there are some activities which they know are wrong but because everyone around them is doing it and it appears no one is speaking against it, they are also forced to do it in order not to be an odd one out. This assertion further substantiates what Burkhalter (1935), Leman (1987) and Ziglar (1986), observed about teenagers that they are greatly influenced by their peers.

**Recommendations:** This paper is advocating Christo-Religious sexual education by exposing young adults to ethics and ethical values of the Bible. The paper takes advantage of the power of the word of God not only to fill people with knowledge but also to

impact behavioural change in people. Thus, this paper will not make any attempt to advocate for the use of condom among the adolescents, but will radically advocate for inculcating good conduct of sexual abstinence until marriage. The paper thus made the following recommendations:

That the society should pay more attention to the teenagers spiritual and moral wellbeing by encouraging their participation in religious programs that will enhance the development of their spirit and transformation of their character. These are crucial to the process of curtailing abuse of electronic media among teenagers.

It is recommended that teenagers must be helped by mature believers to develop discipleship/mentoring relationship with them. That discipleship should be more of personal lifestyles than of teaching. Thus adults are to be good role models to the teenagers.

Parents are advised not to submit to the pressure of their teen children when they are requesting for Blackberry, Smart phones and costly Android phones so that they will not be exposed too early media vices.

The paper propose that teenagers' parents should upgrade their knowledge about various activities which teenagers carry out on their phones in order to be able to monitor their activities closely.

Parents should keep a tap on their teenage children's activities on phone. There are numerous tools that are designed to combat abuse of electronic media, especially watching of pornography on the internet. There are several quality internet filtering programmes that will automatically and

completely block the device from accessing pornography. There is accountability software that tracks internet browsing and sends a report of any objectionable website you have visited to an accountability partner of your choice. Once teenagers know that their parents would receive a detailed report of their activities online, they will exercise restraining. These websites will be of great help: [www.x3watch.com](http://www.x3watch.com) and [www.bsecure.com](http://www.bsecure.com) . Parents should discuss with their children and the children must agree on the need to subject themselves to monitoring as part of the conditions they must fulfill before they can be given access

## References

**Adepoju & Adunola, (2005).**

*Sexuality education in Nigeria: Evolution, challenges and prospects.* London: Pen Press Publishers.

**Akanni, G. (2013).**

*Origin and nature of the fallen Man,* retrieved November 2013. Tape ministry of Peace House international.

**Akinwumi, A. T. (2017).**

Socio-ethical Appraisal of the impact of Social Media on the of the prevalence of Premarital sex among Teenagers in Abundant Life Baptist Association in Ogun State, Nigeria. An M.A dissertation submitted to the Department of Religious Studies, Olabisi Onabanjo University, Ago-Iwoye

**Alo, O.A. (2008).**

Socioeconomic determinants of unintended pregnancies among Yoruba women of South-west Nigeria, in *International Journal of Sustainable Development*, 1 (4), 145-154



- Amao-Kehinde, A. (2008).**  
*A fundamental of adolescent's psychology.* Lagos: Unique educational Publishers
- Armstrong, G.T. (1972).**  
*Your marriage can be Happy.* California: Ambassador College Press.
- Ayantayo, J. K. (2009).**  
*Fundamentals of religious ethics,* Nigeria: End-time Publishing House.
- Ayodele, G. & Oladimeji, O. (2015):**  
Analysis of police records on sexual-related Offences in Lagos state, Nigeria (1999-2004), in *African Journal of Biomedical Research.* 18, 2
- Bell, R.R. and Chaskes, J. B (1970),**  
“Premarital Sexual Experience among coeds in 1958 and 1968”. *Journal of Marriage and the Family.* 32, 81 – 84.
- Bolarinwa, T.A. (1995).**  
*One question Professor Bolarinwa wants University girls to answer* documented in weekly spectator, November 11, pp 23.
- Burkhalter, F.E. (1935),**  
Winning The Adolescent Boy. Nashville: Broadman Press.
- Campbell, R., Martin C.R. and Fabos B. (2006),**  
Media and Culture an Introduction to Mass Communication, fifth edition, New York: Bedford/St. Martin's.
- Chapman, G. (2010).**  
The five love languages of Teenagers. Benin: Joint heirs Publications Nigeria Limited.
- Conger, J. (1961).**  
Adolescence and Youth (2nd Ed) New York: Harper and Row.
- Danielle, T., Fanny M. and Khalid T. (2010),**  
Questions Young People Ask, Answers That Work. Washington D.C: Watch Tower.
- Donovan, O. W. (2000).**  
*Biblical Christianity in modern Africa,* London: Paternoster Press.
- Ehrman (1959)**  
“Sex Education Today”, cited in *Journal and Moral Education* 4, 315 – 318.
- Fatusi A.O. (2005):**  
Adolescent Sexual and Reproductive Health needs in Nigeria: Shaping a Pragmatic and Effective Response. *Journal of Community Medical & Pry Health Care*, 17:1-6. from <http://www.impact-teen-tech.uk/>
- Grant, M.E. (2004),**  
Sex and Tech: How can abuse of technology lead to teen pregnancy. Retrieved December 15, 2016 from <http://www.secureteen.com/child-safety/>
- Hill, B. V. (1985).**  
The Greening of Christian Education, Homebush West. Australia: Lancer Books.
- Kaats, C.R. and Davis, K.E. (1970).**  
“The Dynamics of Sexual Behaviour of College Students”. In *Journal of Marriage and Family.* 32, 390 – 399.
- Kiragu K, Zabin L (1992).**  
The correlates of premarital sexual activity among school-age adolescents in Kenya in *International Family Planning Perspectives*, 19: 92-109.



- Lewis, M., Miller P. and Buchalter A.R. Mone, G. (2012),**  
(2016),  
“Internet Crimes against Children: An Annotated Bibliography of Major Studies.” Retrieved September 14, from <http://www.localgovernment.ng>
- Livingstone, S. and Brake D. (2010),**  
“On the Rapid Rise of Social Networking Sites: New Findings and Policy Implications.” Children and Society, Pp 75-83. Retrieved May 17, 2017 from <http://eprints.lse.ac.uk>
- McKee, J. (2011),**  
The Impact of Technology on Teenagers. Retrieved December 15, 2016
- Medinnus, G.R. and Johnson R.C. (1969),**  
Child and Adolescent Psychology: Behaviour and Development. New York: John Wiley & Sons.
- Medinnus, G.R. and Johnson R.C. (1969),**  
Child and Adolescent Psychology: Behaviour and Development. New York: John Wiley & Sons.
- Momoh, T.A. (1989),**  
“Television as a Vehicle for Natural Mobilization,” in Health and Behavioral Change Communication for Development, Ed. Ralph A. Akinfeleye, Ibadan: Spectrum Books Limited.
- Mosher, D.L. and Cross, H.J. (1975),**  
“Sex Guilt and Premarital Sexual Experience of College Students”. Journal of Consulting and Clinical Psychology 33, 27–32.
- Nirenberg, J. (2006),**  
“Developing an Internet Era Mindset throughout the Organization,” in Business the Ultimate Resource, J. Ann Miller, Ed. China: A&C Black Publishers Ltd.
- Obasola, K. E (2015).**  
A Critical analysis of the role of moral values as a catalyst for social and political development among people in Nigeria in *Asia Pacific Journal of Multidisciplinary Research*, 3, (1) 5-6
- Olaniran, B.A. (2001).**  
"Social Information Processing Theory (SIPT): A Cultural Perspective for International Online Communication Environments." IGI Global (2011): 45 - 46. <<http://www.igi-global.com/viewtitlesample.aspx?id=55560>>.

**Olulowo, O.A. (2017).**

Socio-ethical Perspective on the attitude of the Church to Premarital sex among Adolescents in Lagos State, Nigeria, A Ph. D Thesis submitted to the Department of Religious Studies, Olabisi Onabanjo University, Ago-Iwoye

**Olulowo, Segun (2010).**

*A Philosophical Appraisal of Job's Sufferings and its Implication to the Contemporary Christians in Lagos State.* An M.A dissertation submitted to the Department of Religious Studies, Olabisi Onabanjo University, Ago-Iwoye

**Owolabi, K.S. (2000),**

A Handbook on Computer with Computer Dictionary. Lagos: Pragmatic Educational Press.

**Sweet, L. (1999),**

Aqua Church: Piloting Your Church in today's Fluid Culture, Colorado Springs: David C Cook.

**Wagner, C.A. (1980),**

"Sexuality of American Adolescents", *Adolescence*. 15(59) Fall 567–580.

**Wilson, J.R. and Wilson S.R. (2001),**

Mass Media Mass Culture: An Introduction Fifth Edition. New York: McGraw Hill Companies.

# RELIGIOUS THOUGHTS ON YOUTHS ENTREPRENEURIAL ACTIVITIES IN NIGERIA

DADA Olorunfemi

Department of Religious Studies,

McPherson University,

KM 96, Lagos-Ibadan Expressway,

P.M.B 2094, Seriki Sotayo, Abeokuta, Ogun State, Nigeria.

[dadaolorunfemi@gmail.com](mailto:dadaolorunfemi@gmail.com)

## Abstract

*Aristotle identifies entrepreneurship as unnatural, but it is conceived as one of the viable solutions to the high rate of youth unemployment in Nigeria. In addition, there are frequent complaints about the insincere modes that young entrepreneurs transact business in Nigeria. However, considering the fact that Nigerians are deeply religious and that religion is one of the key variables for decision making in the nation, it is important to examine the religious perceptions on entrepreneurship in Nigeria. The primary goal of this paper is to examine the views of religions on entrepreneurship and how religion can enhance entrepreneurial activities among youths in Nigeria. This paper uses historical and descriptive research approaches. The study reveals that the three religions encourage entrepreneurship. Also, there are many religious institutions and religious individuals in Nigeria that take active part in entrepreneurship. Importantly, this has reduced the rate of unemployment in Nigeria minimally. Nevertheless, religious leaders in Nigeria should be careful not to use religion as a conventional entrepreneurial task. The paper concludes that enlightenment campaigns should be intensified for youths, and more grounds should be covered by the government and religious organisations.*

**Keywords:** Religion, Entrepreneurship, Youth, Unemployment, and Nigeria.

## Introduction

The study of the Nigerians' career trend reveals that Nigerians were more of doing personal jobs or being self-employed as farmers, fishermen, traders, hunters, weavers, medicine men and women, blacksmith, goldsmith among other jobs before the advent of Western Education (Adeyemi, 2002, 62). Before gaining freedom to work personally, the youths may work for the family, the community or enrol as apprentices, in order to learn. Thereafter, they will be freed to work personally. The key principle for this form of learning is functionalism with

special attention on social responsibility, job orientation, political participation and spiritual and moral norms (Omotoye, 2017, 71). In addition, Adeyemi (2003, 62) advances that the indigenous education is functional and involves physical, intellectual, vocational training (agriculture, arts and crafts), community participation, promotion of cultural heritage and respect for elders and people in authorities and cardinal goals. The training is holistic in nature.

After training, there was little cost effect to start and run the business. They readily use the environmental

resources. Hence, Nigerians' viewed any unemployed youth as a lazy person. This is because there are farmlands, for instance, to rent or acquire permanently

or temporarily for farming business and there are availability of resources. This is evident in the Yoruba song below:

*E yin a lá pá má si sé.  
E yin a jẹ gboro dà gbà.  
Ní ìgbà tí odún bá dé o.  
E o fi ewé kòkò bora.*

You that are hale and sound but do not work.  
You that only like wandering around the street.  
When it is time for festival.  
You will not have any good cloth to wear.

Later, there was paradigm shift from the traditional to the Western. Nigerians started going to school to acquire education with the sole aim of using the certificate to secure employment into 'white-collar'— jobs in Government establishments, Banks, Industries and other Organisations. This development is traceable to the coming of Islam to the Northern part of Nigeria in the 14th century and the Christian Missionaries to Badagry, Lagos, and Abeokuta in the late 19th century (Adeyemi, 2002 and Onaiyekan, 2011, 5). It worked perfectly for the first Nigeria generation which were educated. Western education was seen to be fashionable, attractive, and interesting than the former. People were given scholarship to study. Family members, at times, pull resources together to sponsor a member of the family to school believing that the person sponsored will help other members of the family later. However, there was much concentration on using Western Education to seek for job rather than using it to create jobs, and this is t

he point where the Nigeria society is returning to now.

Currently, it is apparently that the 'white-collar' jobs may not be available for all graduates because of nepotism, corruption, lack of governmental proper planning and execution of the plans, and over population against the available resources, and over dependence on white-collar jobs among others. In lucid term, the issues of unemployment and underemployment are realities in Nigeria. The Nigerian Youths are the most affected in this case. In the same vein, Africa, for example, has the largest youthful population in the world (Zuehike, 2009, 9). In Nigeria, according to Awogbenle and Iwuamadi (2010, 831), there are 80 million youths, but 41.6%, within the age bracket of 15-24 and 58.4% within the age bracket of 25- 44 of this number (80million) are unemployed. This menace is capable of generating other vices such as thuggery, cultism, armed robbery, drug abuse, suicidality and prostitution.

The Nigeria government for instance, acknowledged that the government will not be able to provide job for everyone within the government sectors. Also, the government identifies entrepreneurship as a viable solution to youth unemployment in Nigeria (Asogwa and Dim 2016, [www.eajournals.org](http://www.eajournals.org)). Based on this background, and the fact that Nigeria is a religious society, this paper seeks to examine the opinions and impacts of religions in Nigeria on entrepreneurial activities as a solution to unemployment among youths.

### **Theoretical Framework**

Max Weber's theory of social change is used as the theoretical framework for this paper because it assesses the role of religion in entrepreneurship. He advocates a sociological explanation for the growth of entrepreneurship in his theory of social change. He believes that religion had a profound influence on the growth of entrepreneurship ([www.businessmanagementideas.com](http://www.businessmanagementideas.com)). According to him, the spirit of capitalism (in which the market force of demand and supply are allowed to operate freely; economic freedom, private enterprises are the major players and this enable the entrepreneurs to earn more and more profit) originated from Protestantism (Akinbami2013, 54). It is pertinent to know how Protestantism encourages entrepreneurship. In view of this, he holds the view that since the industrial revolution started shortly after the Protestant reformation, then Protestantism (Calvinism precisely) is

responsible for the development of entrepreneurship. In addition, Protestantism legitimised giving of loans with interest (109). This, really make many rich people to have the willingness to lend money to business men and women, and capital is readily available. It should be noted that Catholicism and Islam are against this act of collecting interest from loans. It may not be a pure truth that this trend alone encourages entrepreneurship because there are many Catholic members and Muslims that are entrepreneurs. On the other hand, practically, there are so called Catholic members and Muslims that take and give loans with interest.

Furthermore, the Protestantism theology of secular work as individual calling through which individual can serve God also encourages many people to venture into secular jobs; including business (109). John Calvin doctrine that states that God has preordained those who will enter His Kingdom on the last day and those who will go to hell is another reason for the development of entrepreneurship (109). The Calvinists believe this, but the problem is that who are these people that have been ordained by God to enter heaven? Calvinism, then holds that the rich people are the ones that are ordained for heaven, while the poor are ordained to go to hell. Hence, having this belief, many people were triggered to work hard to acquire material goods as a sign that they are ordained for heaven through entrepreneurship. Consequently, Olademo (2015, 306) avers that Protestantism, in this way, turned the pursuit of profit to a moral crusade. However, this Calvinist teaching is not in consonance with

Jesus' parable of Lazarus and the rich man (Luke 16: 19-31).

In spite of some loopholes in the Weberian assumption, the theory suggests that "the religious belief and ethical value associated with the society plays a vital role in determining the entrepreneurial culture" ([www.businessmanagementideas.com](http://www.businessmanagementideas.com)). It can be inferred from his thought that entrepreneurship is natural and religious. We should note that his idea that entrepreneurial activities are the function of the religious system of the society is not our ultimate focus, but his view that religion stands to shape the entrepreneurial culture of the society.

### **Religion: A Definitional Account**

Briefly, religion, within the Africa context, is the beliefs and practices that guide human being in his or her relationships with God, other human beings and nature. This definition may not represent the ideas of all the world living religions as religion has no universal definition. Nevertheless, it is worthy of note that the position of Karl Marx on religion forms the basis for the need to study the view and impact of religion on people.

The Marxism paints religion as an anti-revolutionary and a tool for the privileged to exploit the common people in the society. He views religion as a negative societal agent which is the opium of the people (Aderibigbe, 2016, p. 31). This generalisation comes up because of his mistrust for capitalism and love for socialism (31). However, religious leaders like Jesus Christ, Prophet Muhammad (Peace be unto Him), Siddhartha Gautama and Martin Luther who were reformists or revolutionists prove that religion can be an agent of positive change in the society. It is the duty of religion to point the right way to human being, but it cannot force human being to follow that way. Religion teaches moral, unite people, communities and nations under the umbrella of the Supreme Being. It is important to realise that whatever phenomenon that exist in the society; whether religion, economic, politics and social can be used either positively or negatively by human being to exploit one another.

Nigerians see themselves as incapable of living in this world without religion. Within the African traditional setting, Mbiti (1970, 10) submits that:

*Africans are notoriously religious, and each people has its own religious system with set of beliefs and practices. Religion permeates into all the departments of life so fully that it is not easy or possible always to isolate it. A study of these religious system is therefore, ultimately a study the peoples themselves in all complexities of both traditional and modern life. Religion is the strongest element in traditional background, and exerts probably the greatest influence upon the thinking and living of the people concerned.*



Pope Paul VI adds that the Africans always view life spiritually (Nnadi, 2004, 110). However, the various vices (rape, crimes, use of hard drugs, fornication, adultery, and other vices) put a question mark on the spirituality of the Africans. Albeit, there is no society that can claim to be totally free from these vices, hence these vices should be deemphasised.

### **Youth and Unemployment**

The youths are the most energetic, brave, active, inventive, and vigorous among the population group in the world. They are the young people between the early childhood age and old age. The Yoruba saying: *Bí sẹ́ bá dí sẹ́ akẹ́ni, mọ̀njesín là n kẹ sí* - the youths should be called when the task demands braveness, reveals the great importance of the youths. They are regarded as the future of any nation. In Nigeria, there is no fixed age range for one to determine who is a youth. For example, the Nigerian Youth Policy of 2007 fixed the range to be between 12 and 30 years (Tijjani, [www.transcampus.org/journal](http://www.transcampus.org/journal)). Omomia (2017, 197) holds that it should be between 15-44 years. The range changes from time to time. There is need for a fixed age range for youth in Nigeria. Awogbende and Iwuamadi (833) state that 60% of the Nigeria population are Youths, but a large percentage of the group are

unemployed.

Unemployment, according to Fajana (2000, 2), is a situation where people who are willing and capable to work could not get suitable paid job. This is a serious issue because applying for jobs is rigorous and costly. The applicants will need money to photocopy copies of credentials and curriculum vitae and for transportation; if feeding and accommodation will not be necessary to attend interviews. In most cases, applicants are more than the available positions. The causes of unemployment in Nigeria include high rate of population growth without proper planning to meet up with the population growth, rural to urban migration, inadequate skills, unfavourable business atmosphere for investors, and corruption (Omomia 2017, 198).

By implication, Ogunkunle (2017, 94) reports that the case of youths unemployment is a major variable behind the high level of insecurity in Nigeria. According to him, many youths engaged in crimes (robbery) because they do not have any job as means of survival. Unemployment could cause poverty, and poverty could make youths to act out of character. It could make them to join bad gangs and later become menace to the society. Ononogbu (2010, 134) captures this well:

*They hang on for some time, just whiling away the time but when they get tired of merely sitting on the wall, they tend to implode and fall into all sorts of anti-social behaviours and habits that the society may not be able to help them again.*

It could be inferred from the above that it cost little to solve the problem of unemployment, but may cost more if the youths start misbehaving. The solution to youth unemployment include organising programs through which the youths can acquire technical and vocational skills, providing loans for youths who have interest in entrepreneurship, improving other sectors of the economic apart from oil sector alone, creating conducive business atmosphere sectors of the economy to reduce the nation's dependence on oil, creating conducive business atmosphere for investors, encouraging local made goods and services, discouraging rural to urban migration, parents should have good plans for their children, and

government should create more jobs.

### **Entrepreneurship: An Account**

The term entrepreneur is the root word for entrepreneurship. Entrepreneurship is from the French word *entreprendre*, (Adeboye and Afolabi, 2009, 29) and German *unternehmen* (Ali, 2014, 200) which means “to undertake”. In term of business, it means to start a business or trade. In addition, an entrepreneur is “the one who organizes, manages, and assumes the risk of a business or enterprise”(29). Chinoyen(2015, 24) interprets the French word *entreprendre* as “the act of doing something” in a military expedition as a strategy to win a war”. She further gives a chronological usage of the term thus:

*In the Middle Ages entrepreneurship was use to describe an actor while in the 17th century description of an entrepreneur was that of a risk bearer. In the 18th century (1725), Richard Cantillion used the word 'entrepreneur' to describe a self-employed person, while in the 19<sup>th</sup> century (1803) Jean Baptiste say used entrepreneur to describe someone who separated profits of capital from profits of the enterprise and a person who possessed managerial skills. In 1876, Francis walker distinguished between those who supplied funds and those who supplied managerial capabilities... Joseph Schumpeter, in 1934 (20th century), saw entrepreneurship as an engine of the economic development. He described innovation as the main purpose of entrepreneurship for economic development. In 1961, David McClelland describe an entrepreneur as someone that met the needs of others for personal achievement... in 1964, Peter Drecker introduced an entrepreneur as a maximize of opportunity/wealth and as someone who was highly creative... according to Bob Reiss (2000), entrepreneurship is the recognition and pursuit of opportunity without regard to one's current control resources, with confidence and assurance of success, and with the flexibility to change topic as necessary and the will to rebrand from any setback...*

Jeffrey and Stephen (Leach and Melicher, 2009, 6) also define it as “a way of thinking, reasoning, and acting that is opportunity obsessed, holistic in approach, and leadership balanced from the purpose of value creation and capture. The definitions point to the fact that opportunities exist but not without risks. The opportunities and risks are not in term of venturing into crimes or any form of evil. On this platform, religion is needful to guide the conducts of any entrepreneurial activity in Nigeria.

Furthermore, Stokes, Wilson and Mador (2010, 7) differentiate between opportunity driven entrepreneurship and necessity entrepreneurship. To do this, they cite that in less developed countries for instance, entrepreneurship levels are always higher than in more developed countries because of unemployment (7). The opportunity drive entrepreneur has different employment options open to him or her, but chooses to peruse an entrepreneurial task instead (7). The necessity entrepreneur goes into entrepreneurship just because of unemployment (7). The necessity entrepreneur may be easily discouraged if expectations are not met.

The challenges for youths intending to go into entrepreneurship are how to raise capital to start and run the business, the business to engage in, location of the business and how to attract customers. They can get capital through personal saving, friends, family members, banks, government, and financial assistance from religious organisations. They can venture into soap making, bricklaying, farming, printing, tailoring, private lesson, freelance writing, house painting, and other self-employed works.

### **African Traditional Religion and Entrepreneurship**

This work draws more instances from Yoruba Religion and culture. Yoruba divinities give a template for the approval of entrepreneurship. For instances, Osanyin was a medicine man or herbalist, and Ogun was a hunter and support hunters, farmers, blacksmith, mechanic and people who work with iron objects. On the question of getting capital, the Yoruba collectivism or communalism permits the raising of capital from friends and family members. The Yoruba believe that God has destined each person to do a particular job, failure to do it, may amount to failure in life. This appears in the song of I.K Dairo:

*IsẸ́orí rǎn mi nímò ñ'se  
Ení bá ja lẹ́ lo' b'EmojẸ́*

I am doing the job that I am destined for  
It is only a thief that should be ashamed

Dairo was a popular juju singer from Ijebu-Ijesha, Osun State. He believes, according to his song, that he was a singer according to the will of

God. *Orí* or *Orí-Inú* as used above is the internal head or personality-soul which is invisible. It is the guardian angel or the inner person or the very essence of

personality (Ogunade, 2017, 71). This is the reason why the Yoruba consult diviners to know the allotted portion of their *Ori-inu* before doing anything.

*The words in Èsá* a chapter of the *Ifá* corpus is an important warning to youths not to be full of themselves, they should start somewhere, and later, they will make it. It states:

Òdómodé a máa kó fánínúyà  
Léyìn èyiniyíó j? rÒrÒ  
Dí 'fáfún Afijàgbèru...

It is in poverty that a boy learns *Ifá*;  
It is afterward that he becomes prosperous  
Cast for Afijagberu...

In addition, the Yoruba says:

Ènití ò bá lè se bí aláà rù l'òyìngbò  
Kò lè se bí adégborò ló'jà? ba

Anyone that cannot humble himself or herself to do  
small job,  
Cannot do big business or job.

They value entrepreneurship, and it is evident in the Yoruba proverb: *Á tÉlÉwÉ Ènikíí tan ni je-* whatever you could produce with your hand remains.

The Igbo life style suggests that many Igbo go to school mostly to acquire communication skill among others reasons. Mostly, they get employed through their apprenticeship system of learning a trade from a relation. In addition, the knowledge of some aspect of indigenous culture and religion could form the basis on which one could be an

entrepreneur. This includes having the knowledge or being an expert in divination, art and craft, traditional medicine and magic, language and culture. However, the transactions should be done in truth, sincerity and selflessness. The Yoruba believe that there is nothing anyone can do successfully in life without good character. Hence, *ìwàrerel' ÈsÈnìyàn-* good character is human valuable treasure. Abioje (2014,17) cites a traditional song thus:

*Másem'òrìsakan mĚnu,  
Òn b? 'gúngún, o níkògbà  
Ìwà r?ni o kĚkĚb?ná*

Do not accuse any divinity,  
You propitiate Egungun, and you say, it does not work,  
First of all propitiate your character.

### **Islam and Entrepreneur**

According to Davis (www.researchgate.net), in Islam, an entrepreneur is a steward with full concern for the community growth and development. Brian (www.tifwe...) supports this notion and adds that it is a special form of stewardship that always seeks to improve the society. The Prophet Muhammad (Peace be unto Him), the Companions of the Prophet, and the successors of the Companions of the Prophet are the role models for the entrepreneurs in Islam and the Glorious Qur'an, the Sunnah (the deeds of the Prophet) and Hadith (the sayings of the Prophet) are the sources of information that contain guiding principles for Muslim entrepreneurs. There are evidences that show that Islam encourages entrepreneurship. The prophet(pbuh) engaged in entrepreneurial activities from childhood and grew up as a successful entrepreneur. He was a source of inspiration for many people because of his special entrepreneur trait (Syahida and Said, 2013, 467). Khadija bint Khuwaylid, the first wife of Prophet Muhammad, was a merchant. Also, the Arabs used to trade with other nations (Mugambi, 1990, 207). The act of trading with other nations formed means of converting nations to Islam.

The Prophet and some of his companions were merchants. Entrepreneur activities are regarded by the Prophet (pbuh) as the main source of generating income for the development of the Islamic Community (Syahida and Said, 2013, 467). According to Nu'aym ibn Abd Ai-Rahman in a Hadith, reveals that the Prophet is of the opinion that nine out of ten sources of income are derived from business activity (469). Qur'an 2:275 affirms that Allah permits trade. Also, Qur'an 4:29 encourages Muslims to engage intrade by mutual good will.

Syahida and Said (469) quotes the reply of the Prophet(pbuh) to a question regarding the best source of generating income to be one's labour, legitimate trade; without cheating or treason. Entrepreneurship is permitted and encouraged in Islam but must be in line with Islamic principles or Shariah. Ali (2014,204) notes that trades in products such as pork(Qur'an 2; 173), alcohol or gambling (Qur'an 5: 90) are forbidden. In addition, practices such as false measure of goods (Qur'an 55: 9; 17: 35) and lying (Qur'an 6: 152; 33: 70; 17:36) are unlawful in trade. Syahida and Said (469) opines that if the entrepreneur is involved in lawful trade, give zakat (almsgiving) and practice charity, and fulfil all family

responsibilities, then he or she will have reward in the hereafter. Entrepreneurs must submit to the will of Allah in all their undertakings. An entrepreneur may own a business organisation as Allah's trustee on earth, but final ownership belongs to Allah (Ali, 2014, p.202). Syahida and Said (469) adds that it is necessary for Muslim entrepreneurs to acquire adequate knowledge in order to act rightly in any transaction.

It is believed that the mode of operation for Muslim entrepreneurs differ from that of the secular entrepreneurs which are mostly controlled by profit motive with no or little consideration for other human beings (470). The attributes of Muslim entrepreneurs include honesty, wisdom, trust, and the willingness to share their knowledge with others. Ali (200), identifies three pillars in Muslim entrepreneurship. According to him, the first pillar is called pursuit of opportunities, second, socio-economic or ethical and third is tagged religio-spiritual. The pillars are interconnected,

but the third pillar lead the entrepreneur to the ultimate objective of pleasing

Allah in any transaction. The wealth acquired by Muslim entrepreneurs should not be used to oppress or monopolise others. They need to be careful so that business transactions will not make them to offend Allah, and harm other Muslims, Non-Muslims and other creatures (470).

The idea of entrepreneurship starts from the fact that Allah created the world and human beings, and the necessary materials for livelihood had been deposited on earth (Qur'an 2:36). However, human beings must seek the face of Allah and do His will (Qur'an 4:32). It is expected of all human being to seek the bounty of Allah (Qur'an 2: 198). The Holy Qur'an stresses that human beings need to work in order to earn a living (Qur'an 53:39). In addition, Hahih Bukhari Volume 2, Book 24, Number 549 emphasises this;

*It is better for anyone of you to take a rope and cut the wood (from the forest) and carry it over to his back and sell it (as a means of earning a living) rather than to ask a person for something and that person may give him or not.*

Syahida and Said (474) also reports that it is good to work and that will make one to have integrity. It appears from the above that able persons are not expected to be idle or turn to begging or depend upon someone. Hence, the act of appearing as Islamic Cleric or African Traditional

Religion Expert, praying for people on the streets and Garages to get money is not tenable. In Ibadan and Oyo, for instance, there are some women who appear or dress in Yoruba Religion costumes (like devotees of Osun; Yoruba water goddess) only to



approach people to request for money. Religiosity does not prevent one from work. Umar, one of the first four Caliphs, asserts that he could not be with the Prophet because he was busy trading (Syahida and Said, p.474). However, when it is time of *salat* (prayer) Umar and other Muslims then will abandon whatever they are doing to go for prayer. The study of the biographies and autobiographies of Religious Specialists/leaders affirm that being a Religious Specialist do not mean that one cannot be an entrepreneur or work to earn a living. There are many present examples of Religious Specialists like Bishop David Oyedepo (Living Faith Church), Alhaji(Chief)(Dr) Abdur-raheem Oladimeji; the Proprietor of Al-Hikimah University, Late Ahaji Abdul-Azeez Arisekola Alao; a businessman, the former Vice President of Nigeria Supreme Council for Islamic Affair, and Aare Musulumi of Yorubaland – the President of Yoruba Muslims, and Reverend Matthew Ashimolowo; the Proprietor of King's University, Osun State, among others, who are properly engaged in entrepreneurship.

### **Christianity and Entrepreneurship**

The fundamental belief of Christians is that God calls everyone to specific duties on earth (Cullen et al, [www.researchgate.net](http://www.researchgate.net)...). According to these scholars, the duty of an entrepreneur in Christianity is to

establish and run business organisation that will bring positive change to the society by blending Christian principles with entrepreneurship skills. They add that Christian entrepreneurs are guided by Christian principles and Holy Spirit (Ephesians 2: 8-10; John 15: 16 and I Corinthians 12: 12-18). Entrepreneurs are expected to live a life of constant service to customers and add new values to customers. The first goal of any Christian entrepreneur is not to gather materialism, but to add good values to the society and run the organisation with Christian religious values (Galatians 5: 22-23). Furthermore, Cullen et al reveals that entrepreneurs must have strong commitment, determination, leadership experience, capable of utilising opportunities, high tolerance for risk, ambiguity and uncertainty, and creativity, self-reliance and adaptability. In addition, they should have the ability of self-motivation, good reputation and knowledge. These will enhance the credibility of the entrepreneur. Brian is of the view that Christian entrepreneurs are creative people who serve as examples to others on how to serve people.

The view of Christianity on entrepreneurship is similar to that of Islam and African Traditional Religion. The Bible urges the adherents to do whatever good they could find doing well (Ecclesiastes 9:10). In addition, Paul admonishes all Christianity to work because anyone who does not work should not eat (II Thessalonians 3:6-15). Christianity, just like other religions, does not encourage laziness,

idleness and begging others for survival.

There are examples of people who were entrepreneurs in the Bible. For instance, Jesus was believed to work with his father Joseph, as a carpenter (Matthew 13: 55), Peter, Andrew, John and James were fishermen (Luke 5: 5-11), Paul was a tentmaker (Acts 18:3), David and Moses were herdsmen (I Samuel 16: 11; Exodus 3:1), Elisha was a farmer (I Kings 19: 19), and Dorcas was into garment making (Acts 9: 36-43). Some of these personalities worked both as ministers of the gospel and entrepreneurs. Currently, the Redeemed Christian Church of God and the Youth Wing of the Christian Association of Nigeria have Youth Entrepreneurship Programmes as one of their Community Social Responsibilities.

### **An Evaluation**

Weber believes that religion; using Protestantism as case study, helps in motivating people to engage in entrepreneurship due to the rise of capitalism in Europe (Cullen et al, [www.researchgate.net](http://www.researchgate.net)...). To him, "social network provides an important context for trust, acceptable norms and expectations of other". The social network in this context cannot be built in isolation except through religious identity which makes the entrepreneurial operation godly. Contrarily, Tawney holds that the Capitalists were successful only by separating religion from business transaction (Syahida and Said, 2013, 468). The arguments involve how religion is used by individuals either to

unite or divide. Entrepreneurs develop more in a society void of religious discrimination. Hence, young entrepreneurs should be accommodative in nature.

In another sense, religion that should play moral enhancing role is used by many religious specialists for business purpose. Therefore, the idea of Smith is worthy of note here. Smith sees religious leaders, especially in Christianity as entrepreneurs not different from other entrepreneurs in other sectors (<https://paulseabright.com>). He makes this assertion after observing the various marketing strategies employed by the religious leaders to attract members which are visible in the conventional entrepreneurial activities. This can lead to unhealthy competition, and connotes a shift from religious principles to secularity. This tendency is expressed by Weber that "later a parallel set of rational, systematising and bureaucratic attitude encouraged by modern economic activity would gradually displace religious mind-set in the long run" (<https://paulseabright.com>). Hence, religion and entrepreneurship are affected.

With the current events in Christianity and African Traditional Religion, it may be correct to state that religion, to an extent, is used as a conventional entrepreneurial activity. This may not be ideal, but from observation, many 'religious leaders' use religion in this form to exploit people. In Nigeria, there exist different individual prophetic ministries, and all claimed to be called by God. It is

possible that they turned to become 'Ministers of God', because of unemployment. The 'Ministers' use different method to get money out of the pockets of people. First, they will display their prophetic gift by revealing the unknown about individuals. Second, they claimed to be spiritual and powerful through God. Lastly, they instruct people to come, touch them or dip a finger in the anointing oil for a certain amount of money; with the hope of receiving instant miracles.

Simon(2017, 9) reports that Africa Traditional Religion experts and some Ministers of God passionately advertise their services on mass media and social media in Ghana. Of course, it is not wrong for medicine men and women do this. But, the implication is that they will pass the burden of the expenses on adverts on the customers. In total, this may be the reason why Aristotle observes that business or engaging in entrepreneurship is unnatural(Davis, [www.researchgate.net](http://www.researchgate.net)). However, entrepreneurship is natural and religious if the socio-religious norms are adhere to.

It should be known that religion is sacred, and should not be used purposely for making money. This is the point where religion could play active role in entrepreneurship. The religious leaders need to instruct their members to make profit, but not to exploit people in the course of being an entrepreneur. They should operate in sincerity and good morals. From the root, as mentioned earlier, the first aim of an entrepreneur is to render service, impact lives and later get paid. This also

represents the core expectations from any religious leader.

Entrepreneurship is a community service that is not free. This is different from asking people to pay money to touch a perceived spiritual object in order to get healing, blessing and fruit of the womb. If they are not healed, will the money be refunded? Religious institutions can participate in entrepreneurship by establishing schools, hospitals or clinic or maternity homes, producing herbals and media houses to meet the needs of people. This work is aware that religious institutions in Nigeria are engaging in the listed areas of entrepreneurship. Omotoye (2017, 74-81) and Nnadi (2004, 111,112) have written more on this. This will serve as good example to the youths and generate more jobs. The religious institutions could still do more by organising more entrepreneurship skill acquisition and empowerment Programmes for the youths.

### **Conclusion**

Significantly, this paper contributes to the literature on religion and entrepreneurship by revealing how religion could encourage and enhance Nigerian youths to engage in entrepreneurship in order to solve the problem of unemployment. It also shows that the three main religions in Nigeria encourage entrepreneurship. In addition, it should be stated that entrepreneurship will not only pull the entrepreneur out of unemployment, but will also provide jobs for other people whom the entrepreneur could employ later. Apart from getting involved in

entrepreneurship, religious leaders have chance of imparting good morals into youths in order to become good entrepreneurs and empower them financially. Religious organisations in Nigeria should imprint the culture of entrepreneurship in members so that they will grow up with a better appreciation and ability to undertake entrepreneurial tasks. They can also organise entrepreneurship workshops for members and empower them. The government should also reduce the rate of taxation; especially for entrepreneur, empower them and regulate international trade in favour of entrepreneurs. Also, the National Director Employment (NDC) should intensify the Entrepreneurship Development Programme (EDP) judiciously. Entrepreneurial courses should be taught as real practical courses in Higher Institutions in Nigeria. Parents can also encourage their children to learn entrepreneurial skill.

#### **Works Cited**

**Abioje, P. O., (2014),**

*African Ancestral Heritage in Christian Interpretations*, (Cape Coast: University of Cape Coast).

**Adeboye, B. and Afolabi, O., (2009)**

*Entrepreneurship: Innovation, Job Creation, Business Education and Link Programmes*, (Lagos: Ifunanya Limited)

**Adeyemi, I., (2003)**

*"The Role of Education in National Development"* in Akanji, M. A. and Jolayemi, T.E., (eds.), *Leading Issues in General Studies: Humanities and Social Sciences*, (Ilorin: University of Ilorin).

**Aderibigbe, I.S, (2016)**

*Contextualizing Religion: study and Practice*, (Ilorin: Unilorin Press).

**Akinbami, C.A. O., (2013)**

"Theories of Entrepreneurship" in Ogunbameru, A. O. (ed.), *Basic Contemporary Issues in Entrepreneurship* (Huntsville: Warren Publishing Company).

**Ali, A. G.,**

"Entrepreneurship from an Islamic Perspective" in [www.researchgate.net/publication](http://www.researchgate.net/publication). Retrieved on 29th December, 2018, 3pm.

**Asogwa, O. S. and Dim, E., (2016),**

"Entrepreneurship Development and Unemployment Reduction in Nigeria" *International Journal of Business and Management Review*, Volume 4, Issue 8, [www.eajournals.org](http://www.eajournals.org). Retrieved on 25th July, 2019, 9pm.

**Awogbenle, A.C, and Iwuamadi, K.C, (2018)**

"Youth Unemployment Entrepreneurship Development Programme as an Intervention Mechanism", *African Journal of Business Management*, No 4, Volume 6.

**Awosusi, B**

"Youth unemployment in Africa: Causes, Effects and Solutions." Retrieved from <https://f4africa.com> 10/11/2018.

**Bascom, W., (1980)**

*Sixteen Cowries: Yoruba Divination from Africa to the New World*, (London: Indiana University Press).

- Brian, B.,**  
 “Entrepreneurship within a Biblical Worldview” in [www.tifwe.org>entrepreneur-research-paper...](http://www.tifwe.org>entrepreneur-research-paper...) Retrieved on 3/1/19,4pm.
- Chinonye, L.E., (2015)**  
*Entrepreneurship: A Conceptual Approach, Second Edition*, (Lagos: Pumark Nig. Limited).
- Cullen, M., Andre, P. C., and Boshoff, L.,**  
 “ The Role of Belief in Entrepreneurship-A Christian Perspective in .Retrieved on 12/1/19,5pm.
- Davis, M.K.,**  
 “Entrepreneurship: An Islamic Perspective”, Retrieved from [https://www.researchgate.net/publication,10/11/2018](https://www.researchgate.net/publication/10/11/2018)
- Fajana, S., (2000)**  
*Function of the Nigerian Labour Market*, (Lagos: Labofin and Company).
- Leach, C., and Melicher, R., (2009)**  
*Entrepreneurial Finance, 4<sup>th</sup> Edition*, (Australia: South –Western Gengage Learning).
- Mbiti, J.S, (1970)**  
*African Religions and Philosophy*, (London: Heinemann).
- Mugambi, J. N.K., (1990),**  
 “The Religious Heritage of Arabia Before and During Muhammad's Time” in **Mugambi, J. N.K., (ed.)**  
*Comparative Study of Religion*, (Nairobi: Nairobi University Press).
- Nnadi, F., (2004)**  
 “Religion as a Factor in Societal Development” in Malachy, I.O, (ed.) *Religion and Societal Development; Contemporary Nigerian Perspectives*, (Lagos: Merit International Publications).
- Ogunade, O., (2017)**  
*Ori:Yoruba Personality Guide*, (California Pacific Phoenix Press).
- Ogunkunle, C.O, (2017)**  
 “Come Let Us Reason Together: An Exegetical Study of Isaiah 1:18-20 in the context of Security Challenges in Nigeria” in Imam Y.O, et al (ed.), *Religion and Human Capital Development: Essay in honour of Pro. NasirAnjolaQuadri*, (Ilorin: Department of Religions, University Of Ilorin).
- Olademo, O, (2015),**  
 “Women in Yoruba and Igbo Indigenous Spirituality” in Ogungbile, D. O, (ed.), *African Indigenous Religious Traditions in Local and Global Contexts: Perspectives on Nigeria*, (Lagos: Malthouse Press Limited).
- Omomia, O.A, (2018)**  
 “Youth Unemployment and Social Welfare Services in Nigeria: Socio- Religious Challenges”, *Journal of University Scholars in Religions, Issue 8, Volume 1*.
- Omotoye, R.W, (2017)**  
 “The Contributions of Christianity to the Development of Western Education in Yoruba land, South-Western Education, Nigeria (1854-2015)” in Iman, Y.O, et al (eds.), *Religion and Human Capital Development: Essay in Honour of Prof. YasirAnjolaQuadri* (Ilorin: Department of Religion).
- Onaiyekan, J. (2010),**  
*Dividends of Religion in Nigeria*, (Ilorin: Department of Religions, Unilorin).



- Ononogbu, D.C., (2010)**  
 “Unemployment among Youths: A Study on the Role of the Nigeria Church” in
- Akanmilu R.A, (ed.)**  
*Religion and Democracy in the 21<sup>st</sup> century, (Ilorin: Nigerian Association for the study of Religions).*
- Seabright, P., R,**  
 “Religion and Entrepreneurship: A Match made from Heaven?” in <https://paulseabright.com>. Retrieved on 3/1/19, 5pm.
- Simon, K.D., (2017)**  
 “Evil and Redemption of Public Spirituality- Examples from Ghana” *Ogbomoso Journal of Theology*, Volume 22(1).
- Stokes, N., et al, (2010)**  
*Entrepreneurship* (Australia: South – Western Gengage Learning).
- Syahida, A., and Said, A. M., (2013),**  
 “Entrepreneurship and Islam: An Expository Study on Characteristics of Muslim Entrepreneur” in [www.Nuradli.com](http://www.Nuradli.com)>iecons2013. Retrieved on 17/1/19, 3pm.
- Tijjani, H.**  
 “Political Violence and Youth Gangs in Bauchi State, Nigeria”, Retrieved from [www.transcampus.org/journals](http://www.transcampus.org/journals). Retrieved on 5/1/2018, 4pm.
- “Top 14 Theories of Entrepreneurship” in [www.businessmanagementideas.com](http://www.businessmanagementideas.com). Retrieved on 7/10/2019.
- Zuehike, E., (2009)**  
 “Youth Employment and Underemployment in Africa brings Uncertainty and Opportunity” in *Population Reference Bureau*



# DEVELOPMENT OF A FUZZY-LOGIC-BASED MODEL FOR THE CLASSIFICATION OF THE RISK OF YELLOW FEVER

<sup>1</sup>ADEKUNLE A.O.,<sup>1</sup>AROYEHUN A.A. <sup>2</sup>AYO F.E.,  
and <sup>2</sup>ANYANWU-EBERE C.

<sup>1</sup>ADEYEMI COLLEGE OF EDUCATION, ONDO

<sup>2</sup>McPHERSON UNIVERSITY, SERIKI SOTAYO, OGUN STATE

## Abstract

*Fuzzy logic-based system has been employed, particularly in the development of predictive systems, and was discovered to produce accurate results. The proposed fuzzy logic -based model is based on the data related to yellow fever, was obtained from experts at the Nigerian Navy Hospital Ojo Lagos and JMC Pediatric Hospital Festac Town Lagos. The data was used to develop a rule-based model and subsequently simulated a prediction model using MATLAB R2017a. The results of variables fuzzification and defuzzification, inference engine, definition and model testing showed that the fuzzy logic-based model is very useful in predicting yellow fever risk. The study concluded that there are 6 risk factors identified in the process, 96 rules and 1 output. This implies that the development of this model helps improve the identification of yellow fever thus improving the life of the patient, thus improving decision-making efforts aimed at reducing the likelihood of diseases affecting humans.*

## Introduction

Communicable diseases are the leading cause of illness and death throughout the world (WHO, 2019 factsheet). This is because microbes 'mmense diversity, coupled with their ability to evolve and adapt to changing populations, climates, behaviors and technologies, creates ongoing health risks and constantly threatens our ability to prevent and control diseases (Baskaran et al., 2015). Yellow fever is an infection of flavivirus that is mainly transmitted by Aedes ssp species mosquitoes and Haemagogus spp., the major vertebrate hosts are human and nonhuman primates. It is endemic in Africa and Central and South America's tropical regions (Monath, 2001; Garskeet al., 2014). Unfortunately, yellow fever as one of the communicable diseases has been overlooked in public-health research and has found its way of resurfacing from time to time. As a

result of this, better information on the extent of yellow fever cases, their causes and risk factors are needed from low- and middle-income countries for planning prevention programmes (Lawn et al., 2011).

Nevertheless, the quantification of the disease burden caused by yellow fever is complex due to the wide range of medical severity, with non-specific symptoms rendering diagnosis difficult for most infections. In fact, there are significant limitations in control and health care systems across many of the regions affected. It is clear, however, that yellow fever is significantly underreported (WHO, 1990). Previous estimates from the early 1990s placed the burden of disease at 200,000 cases and 30,000 deaths annually (WHO, 1992). These estimates relied heavily on data from serological surveys performed in children in Nigeria between 1945 and 1971 (Monath and

Nasidi, 1993). Physicians can therefore benefit greatly from access to better estimates of the risk of yellow fever, so that they can give clinical advice that minimizes the overall risk of adverse outcomes. Conservative patient management might entail increased monitoring. From a statistical perspective, this means that accurate uncertainty quantification is vital, for helping doctors understand which cases have a less precisely estimated risk profile (Starling *et al.*, 2019).

According to Woolhouse *et al.* (2015), surveillance for public health is central to the disease prevention system. The modern concept of public health monitoring is continuous and carried out in a methodical and organized manner as well as the collection, analysis and interpretation of health data to describe and monitor a health event that is closely integrated with the timely dissemination of such data to those who need to know (Oshitani *et al.*, 2008). Moreso, monitoring results are used both to recognize the need for intervention in the area of public health and to determine the efficacy of initiatives.

Monitoring as a concept describes the constant vigilance carried out to ensure effective control or removal (Dickinson *et al.*, 2004). Following this, public health monitoring has been known as an early warning system and a rudimentary indicator of abnormal trends of disease occurring. In public health and policy-making societies, the word communicable disease surveillance is used to express a range of definitions,

methodologies and actions (Green and Kaufman, 2002; Loberet *et al.*, 2002; Hopkins *et al.*, 1985; Mostashari and Hartman, 2003).

Over time, organizations such as WHO's Global Influenza Surveillance Network and U.S. Department of Defense have devised communicable disease surveillance programs control and Biological Threat Reduction Programme, which attempt to identify and track specific diseases (Levac, 2006), while others report rare medical events or clusters of diseases which experts find to be of interest to the communicable disease community (Hutwagner *et al.*, 2003). However, other systems rely on case definitions and clinical observations; others monitor laboratory test results (e.g., serology); some use analysis of samples routinely collected by sentinel clinicians; some derive data from routine computer-based searches of patient or public health records; and some use media reports of disease outbreaks (Hitchcock *et al.*, 2007). Information and Communications Technology (ICT) can be influential in health care services support. It helps in increasing the quality of service and reducing the cost, as the cost of health care is a growing problem (Shekelle, *et al.*, 2006). It can provide new ways that medical practitioners and their patients will be able access and use health information. ICT has the capability of improving the quality, efficiency and safety of health care and allows health care providers to collect, store, retrieve, and transfer information by electronic means. The use of ICT in

health has the capability to improve the quality of health care as stated by many researchers who supported the belief.

Predictive model has become increasingly popular in medical research, which seeks to tell the future events or results based on patterns within a set of variables. Precise predictive models can inform clinicians and physicians about the potential cause of a disease or the risk of contracting a disease and thus help guide screening and/or treatment decisions (Waijee et al, 2013). Fuzzy logic is a technique employed for putting human knowledge that has been elicited and organized into workable algorithms that comprises fuzzy models, as one of the soft computing tools.

In addition, Fuzzy logic, which consists of a set of If-then else rules has the capability to state clearly the ambiguity of human thinking and turn expert knowledge into computable numerical data. Based on this, the study intends to apply fuzzy logic modelling to the development of a predictive model which can be used to assess the risk of yellow fever among individuals in Nigeria.

### **Related Works**

Idowuet *al.* (2018) addressed the problem of environmental health related diseases in Nigeria. in a bid to address the challenge, the authors employed fuzzy logic model to develop a predictive model for the determination for environmental diseases in Nigeria using fuzzy logic tool box contained in MATLAB. The result revealed that there

are instances of environmental related diseases in the areas without portable water and in places that do not have good toilet facilities.

Aroyehunet *al.* (2017) worked on the development of predictive model for determining water related disease in Osogbo, Osun State. The researchers collected data related to water related disease from experts and applied fuzzy logic to develop a rule-based system that predicted the probability of having water-related diseases. The fuzzy model was formulated and simulated to create a system using Matrix laboratory software to give the likelihood of water related disease in the area. The result showed that the methods of fuzzification and defuzzification adopted were useful in suggesting what is likely happen in south wester Nigeria with respect to the occurrence of malaria.

Khormehr and Maihami (2016) investigated the risk involved in the determination of heart disease. The authors in an attempt to analyze the issue, employed a fuzzy logic model to predict the incidence of heart disease. The study identified a number of variables showing tendencies and those without tendencies associated with the risk of heart disease model. The cuckoo search algorithm was applied to the reduction of the variables before the model was formulated using fuzzy membership functions. The result showed that the predictive algorithm gave an accuracy of 95% following validation.

Idowuet *al.* (2015) developed a model to determine the survival of Sickle Aneamia Disease (SCD)

patients among children in Nigeria. The study identified three (3) factors that were associated with severity of the survival of SCD among pediatrics. The study adopted the use of triangular membership functions for the formulation of the classification model to determine the severity of survival of patients, which is predicated on the identified factors. The results revealed that using the IF-THEN rules formulated and provided by experts, the outcome of the severity of SCD survival was easily assessed from pediatrics.

Devi and Rani (2014) addressed the incidence of Mosquito-borne diseases. In this study, the researchers applied fuzzy logic to the development of a predictive model for assessing the incidence of Mosquito-borne diseases. The study recognized factors that were associated with the incidence of Mosquito-borne diseases then formulated membership functions for each variable using fuzzy logic. The outcome of the study revealed that temperature, humidity, rainfall and wind were determinants of the incidence of mosquito-borne diseases. The Fuzzy C-means was used to formulate the model from a sample dataset and validation showed an accuracy of 78%.

## **DESIGN**

Following the process of the review of related works over the internet, a number of associated risk factors were identified which have a relative relationship with the risk of yellow

fever since some risk factors increased while others reduced the associated risk of yellow fever. Numeric integer values also called crisp values were used to define the labels of each risk factor assessed as a way of quantifying the response to each risk factor by a user. As a result of this, higher crisp intervals were given to labels that increased the risk while lower crisp intervals were given to labels that reduced the risk of yellow fever. Thus, each crisp interval was assigned a linguistic value for which each fuzzy membership function was required to be formulated. The risk factors assessed for the risk of yellow fever were non-invasive and age, lifestyle, environmental and socially-related.

Table 1 shows a summary of the crisp values and linguistic variables for each identified variable. The age of the patient is one of the most important risk factors as it was determined that the older the patient was then the higher the risk of yellow fever. It was defined using linguistic values below 50 years and above 50 years which were assigned crisp values of 0 and 1 respectively. The residence of a patient is one of the most important risk factors as it was determined that if the patient is resident in rural areas then the higher the risk of yellow fever. It was defined using linguistic values urban areas and rural areas which were assigned crisp values of 0 and 1 respectively.

Table 1: Identification of Crisp and Linguistic Values of Risk Factors

Risk Factor	Linguistic Variable	Crisp Value
Age	Below_50 years	0
	Above_50 years	1
Residence	Urban	0
	Rural	1
History of Yellow Fever	None	0
	Yes	1
Emergence of Yellow Fever	Non-Emergence	0
	Past Emergence	1
	Re-emergence	2
Prevalence of Yellow Fever Vectors	None	0
	Yes	1
Immunization Shots	None	0
	Yes	1
Risk of Yellow Fever	None	0
	Low Risk	1
	Moderate Risk	2
	High Risk	3

The history of yellow fever was used to determine if there were any history of yellow fever infection to the individual assessed. Having a history of yellow fever infection has a higher relationship with the risk of yellow disease compared with those who do not have any history of yellow fever. It was defined using linguistic values none and yes which were assigned crisp values of 0 and 1 respectively. The emergence of yellow fever among an individual is also related to the risk of yellow fever. Therefore, in an area where yellow fever is re-emerging, there is a higher likelihood of infection compared to a location of past emergence. The area with the lowest risk of yellow fever are the area with no emergence of yellow

fever. It was defined using linguistic values none, past and yes which were assigned crisp values of 0, 1 and 2 respectively. Therefore, those patients residing in locations where vectors are present are of higher risk of yellow fever while those from areas where there are no vectors are likely to have lower risk. The risk of yellow fever is higher among those from areas with prevalence of yellow fever while the risk is lower for patients who are not from such areas. It was defined using linguistic values none and yes which were assigned crisp values of 0 and 1 respectively.

The status of an individual of having had immunization is very



important factor required for assessing the risk of yellow fever since those who have had immunization shots against yellow fever are less likely to be infected by the diseases. It was defined using linguistic values none and yes which were assigned crisp values of 0 and 1 respectively. The risk of yellow fever was determined as a cumulative of the crisp values assigned to the label of the risk factors used to assess the risk of yellow disease. Thus, the value of the sum of the crisp values of all the labels identifying response to a risk factor was required for assessing the interval of risk to which yellow fever is classified. The risk of yellow fever was classified into 4 linguistic variables namely: No Risk, Low Risk, Moderate Risk and High Risk with crisp values of 0, 1, 2, 3 and 4 respectively. After the variables for the proposed system have been established, the membership function for the fuzzy logic model was formulate and determined.

### **Fuzzy Logic Model Formulation for Risk of Yellow Disease**

Developing a classification model for the risk of yellow fever using fuzzy logic theory, each variable identified was fuzzified with the use of triangular

membership function. The triangular membership function required for the provision of 3 parameters consisted of the left-hand base of triangle (a) the central apex of the triangle (b) and the right-hand base of the triangle and (c). The values (a, b, c) of the triangular membership function corresponded to an interval of  $a \leq b \leq c$  such that the parameters are numeric valued.

The interval of this parameter was used to define the crisp interval within which each crisp value required for calling the linguistic variable was assigned. As a result of this, since there were 2 or 3 linguistic variables defined for each risk factor identified then there were 2 or 3 triangular membership functions such that one was assigned to each linguistic variable considered for each risk factor as appropriate. Therefore, 2 or 3 triangular membership functions were crafted mathematically in a methodical way for each risk factor that was identified in this study based on the mathematical expression depicted in equation (2.1). The expression shows how the membership function was used to formulate the label of a variable called *variable\_label* by fitting a numerical value  $x$  into a crisp interval of (a, b, c).

$$Variable\_label(x; a, b, c) = \begin{cases} 0; & x \leq a \\ \frac{x - a}{b - a}; & a < x \leq b \\ \frac{c - x}{c - b}; & b < x \leq c \\ 0; & x > c \end{cases} \quad (2.1)$$

Using 2 or 3 triangular membership functions, the labels of the known risk factors were formulated using the set of crisp intervals of (-0.5, 0.5), (0.5, 1.5)

and (1.5, 2.5) to model the linguistic variables for 0, 1 and 2 respectively such that the values 0, 1 and 2 became the center  $b$  of each interval as shown in



### Fuzzification of the risk of yellow fever

Following the identification and the fuzzification of the risk factors of yellow fever, there was a need to formulate the target variable that was used to define the risk of yellow fever. The membership function was used to express the fuzzy logic model for the target variable by assigning crisp values of 0, 1, 2 and 3 to the target class labels, namely: No risk, low risk, Moderate risk and High risk using the intervals (-0.5, 0.5), (0.5, 1.5), (1.5, 2.5) and (2.5, 3.5) respectively.

Therefore, four (4) triangular membership functions were used to formulate the fuzzy logic model required to describe the 4 labels of the target class that was used to describe the risk of yellow fever using the identified crisp as shown in Table 2. Using the description provided in Table 3, the connection of the risk factors associated with the risk of having yellow fever was proposed using the fuzzy inference system. The construction of the rule base used to design the fuzzy inference engine is presented in the following paragraphs.

Table 2: Description of Crisp Intervals used during Fuzzy Model Formulation

Crisp Value	Interval
0	(-0.5, 0.5)
1	(0.5, 1.5)
2	(1.5, 2.5)

Table 3: Formulation of the Risk of Yellow Fever

Target Class	Interval
No Risk	(-0.5, 0.5)
Low Risk	(0.5, 1.5)
Moderate Risk	(1.5, 2.5)
High Risk	(2.5, 3.5)

### Fuzzy inference system design

Following the formulation of the fuzzy based model using triangular membership functions to model the risk factors and the risk of heart diseases, the fuzzy inference engine was implemented. Thus, establishing a relationship between the identified non-invasive parameters, rules were inferred from the experts in order to

determine the relationship between the parameters identified and the risk of yellow fever. In order to construct the knowledge base of the classification model using fuzzy logic, a number of IF-THEN rules were used by combining the risk factors as the precedence while the risk of yellow fever was used as the consequent variable. Using the risk factors that were identified for assessing the risk of

### Development of a fuzzy-logic-based model for the classification of the risk of yellow fever

yellow fever, the process of inference rule generation usually follows the fuzzification process.

A typical rule that can be inferred is as follows:

*IF (Age = “Below 50”) AND (Residence = “Urban”) AND (Yellow\_Fever\_History = “None”) AND (Yellow\_Fever\_Emergence = “No Emergence”) AND (Prevalence\_Yellow\_Fever\_Vectors = “None”) AND (Immunization\_Shots = “None”) THEN (Risk of Yellow\_Fever = “No Risk”)*

The number of rules that were required to be formulated for the fuzzy model were estimated from the product of the number of linguistic variables for each variable. Therefore, since age had two (2) linguistic variables, residence had two (2) linguistic variables, history of yellow fever had two (2) linguistic variables, emergence of yellow fever had three (3) linguistic variables, prevalence of yellow fever vectors had two (2) linguistic variables, and immunization shots had two (2) linguistic variables. Therefore, the total number of rules were 96 rules.

### RESULT

The results obtained from the mathematical expression of the fuzzy logic model for risk of yellow fever using triangular membership functions based on the crisp intervals. The crisp interval given for every linguistic variable identified in the earlier section of the study. For the labels of each

risk factor defined as relevant, two (2) and three (3) triangular membership functions were formulated, while four (4) triangular membership functions were formulated for target group labels representing the risk of yellow fever. Since the same crisp interval was adopted to define the labels of each risk factor using 2 or 3 triangular membership function with centers of 0, 1 and 2. The mathematical description representing the fuzzy logic model used in the formulation of the classification model was presented in the following paragraphs.

Also, the allocation of the values was done based on the increasing effect of the labels of the identified risk factors used in this study. Therefore, the results of the mathematical representation of fuzzy logic model formulated using the triangular membership function for each of the labels is presented in equations (4.1).

$$Crisp - label\_0(x; -0.5, 0, 0.5) = \begin{cases} 0; x \leq -0.5 \\ \frac{x + 0.5}{0.5}; -0.5 < x \leq 0 \\ \frac{0.5 - x}{0.5}; 0 < x \leq 0.5 \\ 0; x > 0.5 \end{cases} \quad (4.1a)$$

$$Crisp - label\_1(x; 0.5, 1, 1.5) = \begin{cases} 0; x \leq 0.5 \\ \frac{x - 0.5}{0.5}; 0.5 < x \leq 1 \\ \frac{1.5 - x}{0.5}; 1 < x \leq 1.5 \\ 0; x > 1.5 \end{cases} \quad (4.1b)$$

$$Crisp - label\_2(x; 1.5, 2, 2.5) = \begin{cases} 0; x \leq 1.5 \\ \frac{x - 1.5}{0.5}; 1.5 < x \leq 2 \\ \frac{2.5 - x}{0.5}; 2 < x \leq 2.5 \\ 0; x > 2.5 \end{cases} \quad (4.1c)$$

Also, the classification of the risk of yellow fever was classified into four (4) linguistic variables, namely: No risk, Low risk, Moderate risk and High risk using crisp values with centers of 0, 1, 2

and 3 respectively. Using the 4 triangular membership functions stated in equations (4.2a) to (4.2d), the linguistic variables of the risk of yellow fever was formulated.

$$Crisp - no\_risk(x; -0.5, 0, 0.5) = \begin{cases} 0; x \leq -0.5 \\ \frac{x + 0.5}{0.5}; -0.5 < x \leq 0 \\ \frac{0.5 - x}{0.5}; 0 < x \leq 0.5 \\ 0; x > 0.5 \end{cases} \quad (4.2a)$$

$$Crisp - low\_risk(x; 0.5, 1, 1.5) = \begin{cases} 0; x \leq 0.5 \\ \frac{x - 0.5}{0.5}; 0.5 < x \leq 1 \\ \frac{1.5 - x}{0.5}; 1 < x \leq 1.5 \\ 0; x > 1.5 \end{cases} \quad (4.2b)$$

$$Crisp - moderate\_risk(x; 1.5, 2, 2.5) = \begin{cases} 0; x \leq 1.5 \\ \frac{x - 1.5}{0.5}; 1.5 < x \leq 2 \\ \frac{2.5 - x}{0.5}; 2 < x \leq 2.5 \\ 0; x > 2.5 \end{cases} \quad (4.2c)$$

$$Crisp - high\_risk(x; 2.5, 3, 3.5) = \begin{cases} 0; x \leq 2.5 \\ \frac{x - 2.5}{0.5}; 2.5 < x \leq 3 \\ \frac{3.5 - x}{0.5}; 3 < x \leq 3.5 \\ 0; x > 3.5 \end{cases} \quad (4.2d)$$

### Results of the Simulation of the Fuzzy Model for Risk of Yellow Fever

Adopting the triangular membership functions stated in equations (4.1a) to (4.1c), the means of identification of the identified factors were simulated while the membership functions stated in

equation (4.2a) and (4.2b) were also used to simulate the risk of yellow fever using the Matrix laboratory software tool. The results of the simulated membership functions and that of the inference rules were used to generate the final prototype.

## Development of a fuzzy-logic-based model for the classification of the risk of yellow fever

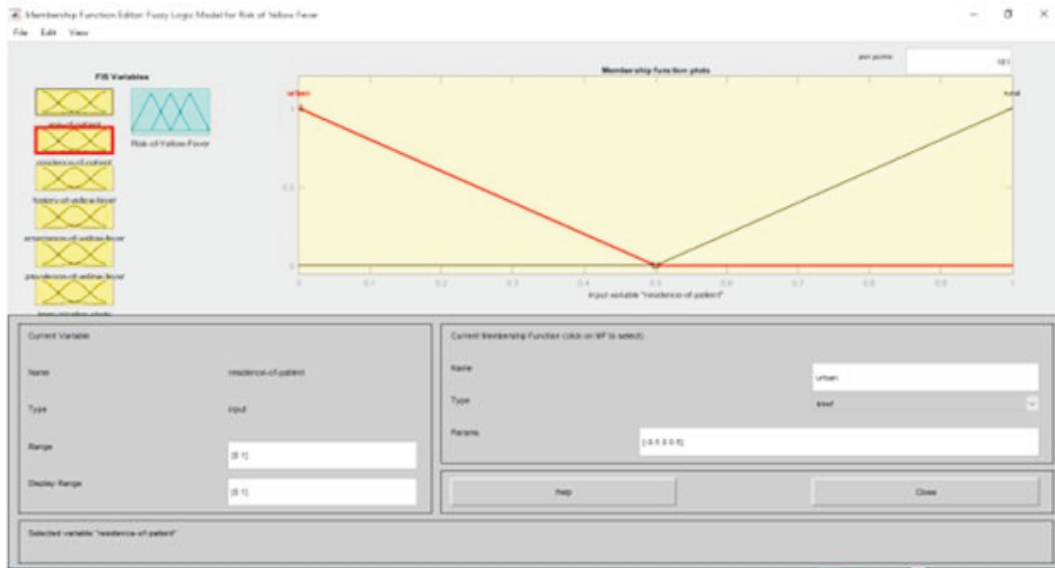


Figure : Fuzzification of Age of Patient

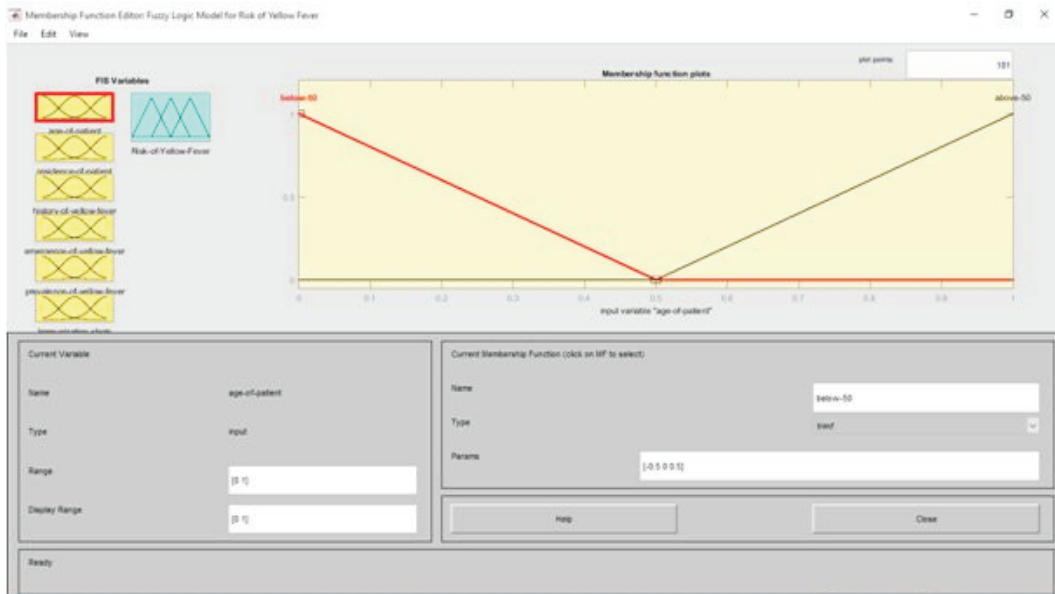


Figure :Fuzzification of Residence of Patient

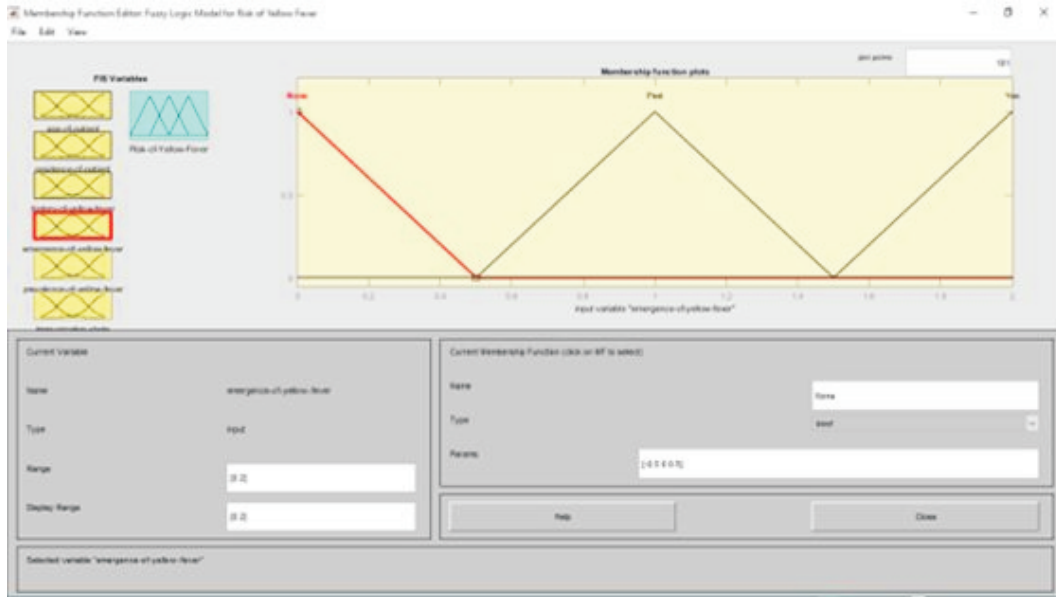


Figure : Fuzzification of History of Yellow Fever

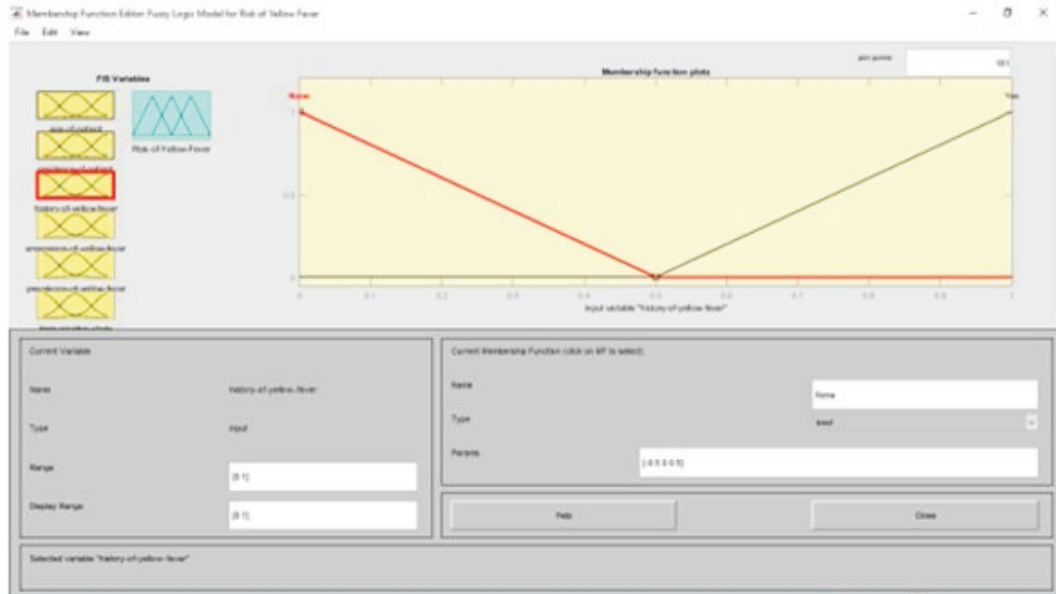


Figure :Fuzzification of Emergence of Yellow Fever

## **Conclusion and Recommendation**

The study concluded that the values of associated risk factors could be used to predict the risk of yellow fever disease. The study also concluded that the six related risk factors identified were: age of patient, living residence, history of yellow fever, emergence of yellow fever at location, prevalence of yellow fever vectors in location and receipt of immunization shots. The study also recommends that additional efforts be put in place by epidemiologists and physicians in the identification of other important risk factors that are associated with the risk of yellow fever disease. This would improve the identification of yellow fever thus improving the life of the patient. A web-based and mobile-based expert system be developed for facilitating the real-time observation and reporting of risk factors thus improving decision-making efforts aimed at reducing the likelihood of diseases affecting humans.

## **References**

- Alexander, G.L., Warren, J.M., Andras, T., Allison, S., Andrea, D., Carlos, A.R., Denice, S.F., Melinda, T. and Joseph, A.C. (2007).**  
Mobile Phone-Based Remote Patient Monitoring System for Management of Hypertension in Diabetic Patients. *American Journal of Hypertension* 25: 1–12.
- Aroyehun A.A., Sabejeje, T.A., Bayo-Lebi, D., Olawuyi, N.J. and Ogunwale, Y.E. (2017).**  
Fuzzy Logic Based Predictive Model for the Likelihood of Water-Related Disease. *Discovery* 53(257): 321–333.
- Awunor, N.S., Omuemu, V.O. and Adam, V.Y. (2014).**  
Knowledge and Practice of Disease Surveillance and Notification among Resident Doctors in a Tertiary Health Institution in Benin City: Implications for Health Systems Strengthening. *Journal of Community Medicine and Primary Health Care* 26(2): 107–115.
- Baskaran, V., Prescod, F. and Dong, L. (2015).**  
A Smartphone-based cloud computing tool for managing Type I Diabetes in Ontarians. *Canadian Journal of Diabetes* 39: 200–203.
- Bhatta, N. and Jyoti, K. (2012).**  
A Novel Approach for Yellow fever Diagnosis using Data Mining and Fuzzy Logic. *International Journal of Computer Applications* 54(17): 16–21.
- Briand, S., Beresniak, A., Nguyen, T., Yonli, T. and Duru, G. (2009).**  
Assessment of yellow fever epidemic risk: an original multi-criteria modeling approach. *PLoS Neglected Tropical Disease* 3: e483
- Chan, E.Y.Y. and Kim, J.J. (2010).**  
Remote Mobile Health Service Utilization Post 2005 Kashmir-Pakistan Earthquake. *European Journal of Emergency Medicine* 17(3): 158–163.
- Devi, M.P. and rani, M.U. (2014).**  
Mosquito-Borne Disease Incidence Prediction System using Fuzzy Weighted Associative Classification. *International Journal of Computer Applications* 91(13): 15–21.



- Djam, X.Y. and Kimbi, Y.H. (2011).**  
Fuzzy Expert System for the Management of Hypertension. *The pacific Journal of Science and Technology* 12(1): 390 – 402.
- Federal Ministry of Health (2005).**  
National Policy on Integrated Disease Surveillance and Response (IDSR).
- Federal Ministry of Health (FMH) (2006).**  
*National Technical Guidelines for Integrated Disease Surveillance and Response.* Epidemiology Division, Federal Ministry of Health, Abuja, Nigeria.
- Federal Ministry of Health (FMH) (2009).**  
*National Technical Guidelines for Integrated Disease Surveillance and Response.* Epidemiology Division, Federal Ministry of Health, Abuja, Nigeria.
- Federal Ministry of Health (FMH) (2010).**  
*National Strategic Health Development Plan (National Health Plan) 2010 – 2015.* Abuja, Federal ministry of Health.
- Garske, T., Van Kerkhove, M. D., Yactayo, S., Ronveaux, O., Lewis, R. F., Staples, J. E., Perea, W., and Ferguson, N. M. (2014).**  
Yellow fever in Africa: estimating the burden of disease and impact of mass vaccination from outbreak and serological data. *PLoS medicine*, 11(5), e1001638. Retrieved from <http://dx.doi.org/10.1371/journal.pmed.1001638>.
- Hutwagner, L., Thompson, W., Seeman, G.M. and Treadwell, T. (2003).**  
The bioterrorism preparedness and response Early Aberration Reporting System (EARS). *J Urban Health* 80(Supplementary 1): i89 – i96.
- Idowu, P.A., Komolafe, O. and Oladejo, R.A. (2018).**  
Fuzzy Logic Model to Forecast Environmental Related Health Diseases in Nigeria. *American Journal of Mathematical and Computer Modelling* 3(1): 27 – 37.
- Idowu, P.A., Aladekomo, T.A., Williams, K.O. and Balogun, J.A. (2015).**  
Predictive Model for Likelihood of Survival of Sickle-Cell Anaemia (SCA) among Paediatric Patients Using Fuzzy Logic. Society for Science and Education United Kingdom, *Transaction on Networks and Communications*, 3(1): 3144.
- Imianvan, A.A. and Obi, J.C. (2012).**  
Cognitive Neuro-Fuzzy Expert System for Hypotension Control. *Computer Engineering and Intelligent Systems* 3(6): 21 – 31.
- Institute of Medicine (IOM) (2010).**  
*Microbial threats to health: Emergence, Detection, and Response.* Washington, DC: The National Academies Press.
- Institute of Medicine (IOM) (2012).**  
*Improving Food Safety through a One Health Approach.* Washington, DC: The National Academies Press.

- International Health Regulation (IHR) (2005).**  
Revision of International Health Regulations. 58<sup>th</sup> World Health Assembly Documentation. Geneva: World Health Organization; 2005. Retrieved from [http://www.who.int/gb/e/e\\_wha58.html](http://www.who.int/gb/e/e_wha58.html) on April 12, 2019.
- Jentes, E.S., Pomeroy, G., Gershman, M.D., Hill, D.R. and Lemarchand, J. (2011).**  
The revised global yellow fever risk map and recommendations for vaccination 2010: consensus of the Informal WHO Working Group on Geographic Risk for Yellow Fever. *Lancet Infectious Disease* 11: 622 – 632.
- Khormehr, A. and Maihami, V. (2016).**  
A Novel Fuzzy Expert System Design for Predicting Heart Diseases. *International Journal of Computer Applications* 138(4): 33 – 38.
- LaBeaud, A.D., Bashir, F. and King, C.H. (2011).**  
Measuring the burden of arboviral diseases: the spectrum of morbidity and mortality from four prevalent infections. *Population Health Metrics* 9: 1.
- Layne, S.P. (2006).**  
Human influenza surveillance: the demand to expand. *Emerging Infectious Disease* 12(4): 562 – 568.
- Lee, L.A., Franzel, L., Atwell, J., Datta, S.D. and Friberg, I.K. (2013).**  
The estimated mortality impact of vaccinations forecast to be administered during 2011–2020 in 73 countries supported by the GAVI Alliance. *Vaccine* 31: B61–B72.
- Levac, S. (2006).**  
*Biological Threat Reduction in Central Asia and the Caucasus*. Paper presented at CBW Breakfast Seminar Series on March 28, 2006: Washington, DC.
- Liu, W., Ma, L. and Wei, D. (2010).**  
Data Mining Based on Rough Sets in Risk Decision-making: Foundation and Application. *Transactions on Computers* 9(2): 113-121.
- WHO (2014).**  
The top 10 causes of death. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/the-top-10-causes-of-death> on November 18, 2019.

# EFFECT OF CAPITALIZATION OF ENVIRONMENTAL COST ON THE QUALITY OF ACCOUNTING DISCLOSURE OF SHIPPING COMPANIES IN NIGERIA

Lawal Babatunde Akeem  
Department of Accounting & Finance  
McPherson University  
Seriki-Sotayo, Ogun State  
E mail: [ab400level@yahoo.com](mailto:ab400level@yahoo.com)

## Abstract

*Environmental accounting helps the firm to record all environmental costs incurred by the business thereby finding a way of reducing the cost so that the business can increase profit. This paper establishes the effect of capitalisation of environmental cost on the quality of accounting disclosure of shipping companies in Nigeria. This study adopted descriptive research design and the population of the study comprised all the registered shipping companies in Nigeria. The target population of this study comprised the legal, finance and account and technical and marine departments of the shipping companies. Primary data was collected through administration of questionnaires. Simple regression was used to test the relationship between the variables of study. The findings of this study show that capitalisation of environmental cost influences the quality of disclosure of shipping companies in Nigeria. It is therefore recommended that environmental costs should be capitalised or expensed as the most controversial subjects for accountants as well as financial analyst. Companies should capitalise environmental cost if they are considered to be a cost of the expected future benefits from the assets regardless of whether there is any increase in economic benefits.*

**Keywords:** environmental accounting, environmental cost, accounting disclosure, shipping companies, capitalization and accountants.

## Introduction

Measuring environmental performance and setting targets is a critical component for organisations to become more productive, more profitable, and more sustainable (Freedman 2006). Monitoring key metrics such as energy, waste, and water usage leads to reductions in greenhouse gas emissions as well as operational efficiency improvements and cost savings. Environmental accounting is an inclusive field of accounting. It provides reports for both internal use, generating environmental information to help make management decisions on pricing, controlling overhead and capital budgeting, and external use,

disclosing environmental information of interest to the public and to the financial community. Internal use is better termed environmental management accounting (Bartolomeo, Benneth, Bouma, Heydkamp, James & Wolter, 2000).

Accountants, as the basic custodians and light bearers of economic development can no longer shut their eyes to the effect of environmental issues on business management, accounting, audit and disclosure system. Protection of environment and the potential involvement of accountant is becoming a common subject of discussion among the accountant all over the world (Pramanik, Shil, & Das, 2007).

According to Bassey, Effiok and Okon (2013), environmental accounting helps the firm to record all environmental costs incurred by the business thereby finding a way of reducing the cost (environmental expenses) so that the business can increase profit. Consequently, private and institutional investors (local and foreign) are hesitant in investing in such emerging economies due to lack of transparency. Lack of proper use of International Accounting Standards in affected countries hinders "transparency" in the financial statements of corporations.

The objective of this study is to determine the effect of capitalization of environmental cost on the quality of accounting disclosure of shipping companies in Nigeria. When environmental costs are not adequately allocated, cross-subsidization occurs between products. In most cases, different products are made by different processes, and each process tends to have a different environmental cost (Christ & Burritt, 2013).

## **Literature Review**

### ***Conceptual Review***

Environmental accounting is an emerging and dynamic field. It is a fruitful attempt to identify and bring to the light the resources exhausted and cost rendered reciprocally to the environment by the business houses. Environmental accounting system is part of a larger corporate environmental policy, which aims to prevent and reduce environmental impact, through life-cycle analysis, integration of

environmental values into the supply chain, eco-design of products and services and environmental monitoring and auditing (Dragomir & Ilesu, 2008).

Environmental accounting as a prevalent subject in the international community is not yet a priority in Nigeria. According to the US Environmental Protection Agency (1995a), Green accounting or Environmental accounting is defined as: 'identifying and measuring the costs of environmental materials and activities and using this information for environmental management decisions. The purpose is to recognize and seek to mitigate the negative environmental effects of activities and systems'.

Howes (2002) defines environmental accounting as: 'the generation, analysis and use of monetarized environmentally related information in order to improve corporate environmental and economic performance'. In the opinion of Howes, environmental accounting does not only focus on internal and external environmental accounting but links environmental and financial performance more visibly. Environmental accounting assists in getting environmental sustainability embedded with an organization's culture and operations. The aim is to provide decision makers with the information that enable the organization to reduce costs and business risks and add value.

Broadly, environmental accounting involves the identification, measurement and allocation of environmental costs, the integration of these costs into business, identifying

environmental liabilities, if any, and finally communication of this information to the company's stakeholder as part of general purpose financial statements.

Disclosure indices are extensive lists of selected items, which may be disclosed in company report (Marston & Shrides, 1991). A disclosure index could include mandatory items of information and/or voluntary items of information. It can cover information reported in one or more disclosure vehicles such as corporate annual reports, interim reports, investor relations etc. It can also cover information reported by the company itself and/or others such as financial analysts reports. Hence, a disclosure index is a research instrument used to measure the extent of information reported in a particular disclosure vehicle(s) by a particular entity(s)

according to a list of selected items of information. The first use of such an index was in 1961 by Cerf and it has been used ever since.

### Conceptual Framework

According to Kombo and Tromp (2006), a concept is an abstract or general idea inferred or derived from specific instances. A conceptual framework is a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation. In this study, the conceptual framework has shown on figure 2.1 shows the relationship of the independent and dependent variable. The independent variable of this study is capitalization of environmental costs and the dependent variable is quality of accounting disclosure.



**Figure 2.1 Researcher's Conceptual Framework**

### Theoretical Review

#### Stakeholder Theory

The stakeholder theory is one of the various approaches that try to explain or rationalize strategy of organizations. It has its main underpinning on the emphasis placed on the role of stakeholders of a firm in the pursuit of

its objectives. "Stakeholder theory attempts to articulate a fundamental question in a systematic way: which groups are stakeholders deserving or requiring management attention, and which are not?" (Mitchell, Agle & Wood, 1997). It acknowledges the dynamic and complex relationships between organizations and their stakeholders and that these relationships involve responsibility and

accountability (Gray, Owen & Adams, 1996). "Stakeholder analysis enables identification of those societal interest groups to whom the business might be considered accountable, and therefore to whom an adequate account of its activities would be deemed necessary" (Woodward & Woodward, 2001). The stakeholders of a firm are viewed as being a critical factor to the survival of the organization. The relevance of this theory to this study is that management should try and build a framework that will be responsive to the concerns of managers who were being buffeted by unprecedented levels of environmental turbulence and change

#### ***Legitimacy Theory***

The legitimacy theory is probably the most widely used to explain environmental disclosure. According to Cho and Patten (2007), the legitimacy theory implies that environmental disclosure is a function of the intensity of societal and political pressure faced by a company regarding the environmental performance. As a reaction on this pressure, firms try to provide more environmental information. Campbell, Craven and Shrives (2003) examined perceived legitimacy gap alongside of Voluntary Disclosure requirement for social and environmental issues and costs.

Legitimacy theory posits that organizations are continually seeking to ensure that they operate with the bounds and norms of their respective societies (Deegan, Rankin, & Voght, 2000). Legitimacy can be considered as "a generalized perception or assumption that the actions of an entity are

desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs and definitions" (Suchman, 1995). The relevance of this theory is that as the number of researchers adopting legitimacy theory as the theoretical basis for their social and environmental accounting research has grown, so too, has the sophistication and understanding of its application been refined.

#### ***Signalling Theory***

Signalling theory was used in prior studies to explain why managers voluntarily disclose forward-looking information in their annual report narratives (Schleicher, 2007). Signalling theory can be traced back to Akerlof (1970) who explained signalling theory in a general product market setting. This theory is based on the idea of information asymmetries between insiders (managers) and outsiders (i.e. investors). Managers usually have better information than other stakeholders, and therefore outsiders may interpret any additional information as signals to the stock market. Corporate environmental responsibility represents a firm's strategy to respond adequately to the expectations of society in which it operates. The relevance of this theory is that firms should provide information that could be used by individuals who are seeking to form impressions about the firm, its values and the overall future direction.

#### ***Empirical Review***

Mohamed and Faouzi (2014) examined the effect of corporate environmental



disclosure on the cost of equity capital for a sample of Tunisian firms over the period 2003-2011. Using an approach based on increasing dividends to estimate firms' cost of equity, the authors found that firms with better environmental disclosure scores exhibit cheaper equity financing. In particular, their findings suggested that investment in practices of corporate environmental disclosure contributes substantially to reducing firms' cost of equity. The paper contributed to the literature by adding evidence on effects of corporate environmental disclosure voluntary on long term economic forecasts of the cost of equity and on the financial value of firms.

Botosan, Plumlee, and Xie (2004) examine the Association between Disclosure Quality (both private and public) and Cost of Equity Capital at the Aggregate Disclosure Level. They capture the underlying quality of investors' public and private information sets from properties of financial analysts forecasts (which represent an *ex post* reflection of the consequences of all disclosure decisions). They find that an inverse relation exists between the quality of public disclosure and cost of equity capital, as predicted by Easley and O'Hara (2004), but this relation is more than offset by the positive relation that exists between the cost of equity capital and private disclosure quality.

Shen and Huang (2010) carried out a study on an analysis of environmental disclosure of listed companies in China. Based on the content analysis of annual reports of listed companies from heavy polluting industries in 2007, the study

describes the latest practices of environmental disclosure in China. The study discovers that: (1) A lot of environmental information has been disclosed, either voluntarily or mandatorily, and has covered most of the content themes suggested by Environmental Disclosure Guideline (EDG); (2) More firms provide quantitative or monetary information in mandatory disclosures, while voluntary disclosures are predominantly declarative in nature. (3) There are significant differences among industries in content, quality, and quantity of environmental disclosures. The finding of their study is to improve the environmental disclosures and finally the environmental performances of businesses in China.

Diamond and Verrecchia (1991), Easley and O'Hara (2004) and Kelly and Ljungqvist (2012) studies show that the more information a firm discloses the more its cost of capital decreases. Previous empirical studies indicate a generally negative association between a firm's disclosure and fundamental risk measures, such as total risk and/or cost of capital. This result is interpreted as evidence of the usefulness of disclosures by firms (Campbell *et al.*, 2003; Leuz & Verrecchia, 2000; Botosan & Plumlee, 2002; Kothari, *et al.*, 2009).

[McElroy](#) (2007) conducted a study on Environmental Remediation Costs: To Deduct or to Capitalise and noted that Under IRC (Internal Revenue Code) Section 162, corporations may deduct "ordinary and necessary expenses (that are) paid or incurred during the taxable year in carrying on a

trade or business.” The IRS addressed the deduction of remediation costs in revenue ruling in which a deduction was allowed when the costs are not incurred for permanent improvements to the land and will not produce significant future benefits. Under the ruling, increased value is determined by comparing the value “of the asset after the expenditure with the status of the asset before the condition arose that necessitated the expenditure (i.e., before the land was contaminated by the taxpayer's hazardous waste).” If value increases in this context, then the remediation costs must be capitalized. The ruling limits remediation deductions to amounts that are attributable to contamination caused by the taxpayer while the taxpayer owned the property. The IRS has allowed taxpayers to deduct the clean-up costs when there is a temporary break in ownership of the property, but deductions are not available for pre-acquisition contamination.

Dunk (2002) investigated the extent to which product quality and the implementation of environmental accounting positively influence quality performance. He suggested that the integration of environmental issues into financial decision processes by using environmental accounting would contribute to the enhancement of quality performance and firm performance as a whole. Gamble *et al.* (1995) (US) investigated the quality of environmental disclosures in the 10K and annual reports of 234 companies in twelve industries, between 1986 and 1991. An instrument was designed to measure the content of environmental

disclosures, and descriptive reporting codes were used, based on the manner in which the sample firms disclosed environmental information. Companies in the sample were from industries thought to have the greatest potential for environmental impact; oil and gas; chemicals and related; plastics, resins and elastomers; soap, detergent and toilet preparations; perfume, cosmetics and toilet preparations; paints varnishes and lacquers; petroleum refining; steel works and blast furnaces; motor vehicles and car bodies; and hazardous waste management.

### **Methodology**

This study adopted descriptive research design and the population of the study comprised all the registered shipping companies in Nigeria. The target population of this study comprised of the legal, finance and account and technical and marine departments of the shipping companies. Primary data was collected through administering of questionnaires. Multiple regressions were used to test the relationship between the variables of study. Sample of the respondents was grouped into strata of the legal department, finance department and the technical and marine department staff of the shipping companies in Nigeria. Within each of the strata, simple random sampling was used to identify individual respondents who were issued with a questionnaire to respond to research statements. A unit of analysis was the shipping company. The following formula developed by Cochran (1963) was used to guide the selection of the respondents as suggested by Mugenda (2008).

$$n = \frac{(1.96)^2 * (0.5)(0.5)}{(0.05)^2} = 384$$

Where: n=Sample size for large population

Z = Normal distribution Z value score, (1.96)

p = Proportion of units in the sample size possessing the variables under study, where for this study it is set at 50% (0.5)

e= Precision level desired or the significance level for the study which is expressed as decimal (e.g., .05 = +/- 0.05 percentage points).

The substituted values in determining the sample size for a large population are as follows.

$$n = \frac{(1.96)^2 * (0.5)(0.5)}{(0.05)^2} = 384$$

Therefore, the sample size was 384.

Furthermore, simple regression was useful in showing whether the identified linear relationship was

significant or not. A regression coefficient with a p value of less than 0.05 indicated that the variable capitalisation of environmental cost significantly influence the quality of accounting disclosure. Therefore, the study used the following model to test whether quality of accounting disclosure Is a function of the independent variable.

$$Y = \beta_0 + \beta_1 X_1 + ?$$

Where Y – dependent variable –quality of accounting disclosure

$X_1$  – capitalization of environmental cost (CEC)

? – is the error term which is assumed to be normally distributed with mean zero and constant variance

$\beta$  – Parameters to be estimated

$\beta_1$  – Coefficient of independent variable  $X_1$

$\beta_0$  is a constant (intercept)

**Table 3.1 Measurements of Variables and Analysis of Objective.**

S/N	Variable name	Objective	Data Requirements	Source	Analytical tools to be used
1	Independent	To determine the effect of capitalization of environmental cost on quality of accounting disclosure of shipping companies in Nigeria	Quality of investor's information, environmental remediation costs.	Primary data via administration of questionnaire	Descriptive Statistics, Simple Regression.

## Data Presentation, Results and Discussion

### Descriptive Statistics

**Effect of capitalisation of environmental cost on quality of accounting disclosure of shipping companies in Nigeria**

The study sought to determine the effect of capitalisation of environmental cost on quality of accounting disclosure of shipping companies in Nigeria. In response to whether the company pays taxes of the environmental contamination. A significant majority 74.7% agreed with the statement, 18.8% remained neutral and 6.6 % disagreed. This implies that majority of the respondents agreed that the company pay taxes of the environmental contamination. The responses had a mean of 4. Most responses were 4, confirming that the company pay taxes of the environmental contamination. The finding is in line with McElroy who noted that under IRC (Internal Revenue Code) Section 162, which states that corporations may deduct “ordinary and necessary expenses (that are) paid or incurred during the taxable year in carrying on a trade or business.

The respondents were asked in their opinion whether the company incurs cost of draining the waste from the old tanks. A total of 75.9% agreed with the statement, 19% were neutral and 5.1% disagreed. This indicates that majority of the respondents agreed that the company incurs cost of draining the waste from the old tanks. Most responses were 4, confirming that the company incurs cost of draining the waste from the old tanks. The finding is in line with Judge and Douglas (1998) who reported that firms can often reduce waste and hence cost through the

use of environmentally preferable material substitutes.

Investment in practices of corporate environmental disclosure contributes substantially to reducing cost of equity. Majority of the respondents 73.6% agreed with the statement, 21.2% remained neutral and 5.2% disagreed. This reveals that majority of the respondents agreed that investment in practices of corporate environmental disclosure contributes substantially to reducing cost of equity. Most responses were 4, confirming that investment in practices of corporate environmental disclosure contributes substantially to reducing cost of equity. The study concurs with Mohamed and Faouzi (2014) who suggested that investment in practices of corporate environmental disclosure contributes substantially to reducing firms' cost of equity.

The respondents were asked to indicate their opinion whether the company incurs cost to transfer the waste to new composite material tanks. A significant majority 72.4% agreed with the statement, 22.4% remained neutral and 5.1% disagreed. This indicates that majority of the respondents agreed that the company incurs cost to transfer the waste to new composite material tanks. Most responses were 4, confirming that the company incurs cost to transfer the waste to new composite material tanks. Environmentally conscious design and manufacturing aims to reduce disposal costs and environmental risks, improve product quality at lower cost, minimize waste, and increase productivity (Mannion 1996; Rugman&Verbeke 1998; Zhang *et al.* 1997).

An expenditure that repairs a defect that exists prior to acquisition is capitalised. A total of 73.6% agreed with the statement, 20.2% were neutral and 6.1% disagreed. This implies that majority of the respondents agreed that expenditure that repairs a defect that exists prior to acquisition is capitalised. Most responses were 4, confirming that expenditure that repairs a defect that exists prior to acquisition is capitalised. Failure to pay attention to environmental issues may expose a firm to sanctions and penalties, as well as to a reduction in its market capitalisation (Cormier & Magnan 1997; Burritt *et al.* 2002).

Asked to indicate in their opinion whether the company allows capitalisation of deductions of any contamination of property. Majority of the respondents 74.7% agreed with the statement, 18.8% remained neutral and 6.6% disagreed. This indicates that most of the respondents agreed that the company allows capitalisation of deductions of any contamination of property. Most responses were 4, confirming that the company allows capitalisation of deductions of any contamination of property. If value

increases in this context, then the remediation costs must be capitalised. The finding supports [McElroy \(2007\)](#) who find out that increased value is determined by comparing the value “of the asset after the expenditure with the status of the asset before the condition arose that necessitated the expenditure”. If value increases in this context, then the remediation costs must be capitalised.

My company incurs costs to remove the old steel underground storage tanks. A significant majority 73.2% agreed with the statement, 20.5% were neutral and 6.3% disagreed. This reveals that most of the respondents agreed that the company incurs costs to remove the old steel underground storage tanks. Most responses were 4, confirming that the company incurs costs to remove the old steel underground storage tanks. The finding is consistent with the findings of USEPA (1995b) which noted that many environmental costs may be reduced or eliminated by operational changes, investment in greener technology, and product redesign. The responses are presented in the table 4.1.

**Table 4.1 Responses on Capitalisation of Environmental Cost**

Statement	Strongly Disagree %	Disagree %	Neutral %	Agree %	Strongly Agree %	Mean S.D
My company pays taxes of the environmental contamination	2.9	3.7	18.7	53.2	21.5	4 1
My company incurs cost of draining the waste from the old tanks	2.2	2.9	19.0	53.9	22.0	4 1
Investment in practices of corporate environmental disclosure contributes substantially to reducing cost of equity	2.0	3.2	21.2	53.4	20.2	4 1



***Effect of capitalization of environmental cost on the quality of accounting disclosure of shipping companies in nigeria***

My company incurs cost to transfer the waste to new composite material tanks	1.7	3.4	22.5	52.2	20.2	4	1
An expenditure that repairs a defect that exists prior to acquisition is capitalised	2.0	4.1	20.3	52.4	21.2	4	1
My company allows capitalisation of deductions of any contamination of property	2.9	3.7	18.8	53.1	21.5	4	1
My company incurs costs to remove the old steel underground storage tanks	2.2	4.1	20.5	51.7	21.5	4	1
<b>Average</b>	<b>2</b>	<b>4</b>	<b>20</b>	<b>53</b>	<b>21</b>	<b>100</b>	

***Quality of Accounting Disclosure***

In this study quality of disclosure was the dependent variable. In response to whether the company sets out its environmental policy and develops information systems for monitoring its performance. A significant majority 74.9% agreed with the statement, 17.8% remained neutral and 7.3 % disagreed. This indicates that majority of the respondents agreed that the company sets out its environmental policy and develops information systems for monitoring its performance. The responses had a mean of 4. Most responses were 4, confirming that the company sets out its environmental policy and develops information systems for monitoring its performance. The finding concurs with Macve and Carey (1992) who recommended that as part of the annual reporting cycle, a company should publish details of environmental performance.

The company engages more actively in environmental disclosure in its annual report. A total of 75.4% agreed with the statement, 16.8% were neutral and 7.8% disagreed. This implies that majority of the respondents

agreed that the company engages more actively in environmental disclosure in its annual report. Most responses were 4, confirming that the company engages more actively in environmental disclosure in its annual report. The finding is consistent with the findings of UNEP (1996) which reveal that although not many nations are currently reporting disclosures on environmental issues in financial statements.

The respondents were asked to indicate in their opinion whether financial information is aggregated and classified according to standard disclosure formats. Majority of the respondents 73.4% agreed with the statement, 20.2% remained neutral and 60.4% disagreed. This indicated that majority of the respondents agreed that financial information is aggregated and classified according to standard disclosure formats. Most responses were 4, confirming that financial information is aggregated and classified according to standard disclosure formats. The study is supported by Rezaee and Rick Elam (2000) who discussed there are two significant



types of environmental accountability; mandatory requirements where the corporations must comply with applicable governmental laws and regulations, and voluntary initiatives as an integral part of social responsibilities.

The company publishes its annual report with timely and reliable information useful for making efficient and effective decision. A significant majority 72.7% agreed with the statement, 19.5% remained neutral and 7.8% disagreed. This implies that majority of the respondent agreed that the company publishes its annual report with timely and reliable information useful for making efficient and effective decision. Most responses were 4, confirming that the company publishes its annual report with timely and reliable information useful for making efficient and effective decision. The study agree with Ali, Ahmed and Henry (2004) which reveals that the level of reliable and adequate information by listed companies in developing countries lags behind than in developed ones and government regulatory forces are less effective in driving the enforcement of existing accounting standards.

The respondents were asked to indicate whether the financial information presented is credible and enhances the reliability of the financial statements. A total of 74.9% agreed with the statement, 17.8% were neutral and 7.3% disagreed. This indicates that majority of the respondents agreed that financial information presented is

credible and enhances the reliability of the financial statements. Most responses were 4, confirming that financial information presented is credible and enhances the reliability of the financial statements. The finding is supported by Daniel and Ambrose (2013) who recommended that government should give tax credit to organizations that comply with its environmental laws and that environmental reporting should be made compulsory in so as to improve the performance of organizations and the nation as a whole.

The respondents were asked in their own opinion to indicate whether financial statements are prepared in accordance with disclosure requirements. Majority of the respondents 75.4% agreed with the statement, 16.8% remained neutral and 7.8% disagreed. This implies that majority of the respondents agreed that financial statements are prepared in accordance with disclosure requirements. Most responses were 4, confirming that financial statements are prepared in accordance with disclosure requirements. The finding is supported by Rezaee and Rick Elam (2000) who discussed there are two significant types of environmental accountability; mandatory requirements where the corporations must comply with applicable governmental laws and regulations, and voluntary initiatives as an integral part of social responsibilities. The responses are presented in the table 4.2.

**Table 4.2: Responses on Quality of Accounting Disclosure**

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean S.D
	%	%	%	%	%	
The company sets out its environmental policy and develops information systems for monitoring its performance.	3.2	4.1	17.8	51.7	23.2	4 1
The company engages more actively in environmental disclosure in its annual report.	2.7	5.1	16.8	54.9	20.5	4 1
Financial information is aggregated and classified according to standard disclosure formats	2.4	3.9	20.2	47.8	25.6	4 1
The company publishes its annual report with timely and reliable information useful for making efficient and effective decision.	2.7	5.1	19.5	49.0	23.7	4 1
The financial information presented is credible and this enhances the reliability of the financial statements	3.2	4.1	17.8	51.7	23.2	4 1
Financial statements are prepared in accordance with disclosure requirements.	2.7	5.1	16.8	54.9	20.5	4 1
<b>Average</b>	<b>3</b>	<b>5</b>	<b>18</b>	<b>52</b>	<b>23</b>	<b>100</b>

### ***Regression Analysis***

#### ***Effect of capitalisation of environmental cost on quality of accounting disclosure of shipping companies in Nigeria.***

Regression analysis was conducted to determine whether capitalization of environmental cost was a significant determinant of quality of accounting disclosure. Regression results in table 4.3 indicate the goodness of fit for the regression between Capitalisation of Environmental Cost and Quality of Accounting Disclosure. The regression analysis shows a relationship  $R=0.678$

and  $R^2=0.460$ . This shows that 46.0% of variation in the quality of disclosure be explained by a unit change in capitalisation of environmental cost. The remaining percentage of 54.0% is explained by other variables outside the model. This is shown in table 4.3. Mohamed and Faouzi (2014) examined the Effect of Corporate Environmental Disclosure on the Cost of Equity Capital for a sample of Tunisian firms over the period 2003-2011 and found that firms with better environmental disclosure scores exhibit cheaper equity financing. In particular, their findings suggested that investment in practices of corporate environmental disclosure contributes substantially to reducing firms' cost of equity.

**Table 4.3 Model Summary for Capitalisation of Environmental Cost and Quality of Accounting Disclosure**

R	R Square
.678 <sup>a</sup>	.460

a. Predictors: (Constant), Capitalisation of environmental cost

F-test was then carried out to test the null hypothesis that there is no relationship between capitalisation of environmental cost and quality of accounting disclosure. Analysis of variance (ANOVA) was used to determine whether there is a regression relationship, between capitalisation of environmental cost and quality of accounting disclosure. The ANOVA test in Table 4.4 shows that the significance

of the F-statistic 0.000 is less than 0.05 meaning that null hypothesis is rejected and conclude that there is a relationship between capitalisation of environmental cost and quality of accounting disclosure. Botosan *et al.* (2004) examine the association between Disclosure Quality (both private and public) and Cost of Equity Capital at the Aggregate Disclosure Level and found that an inverse relation exists between the quality of disclosure and cost of equity capital.

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	3480.315	1	3480.315	347.544	.000 <sup>b</sup>
Residual	4085.587	408	10.014		
Total	7565.902	409			

To test the significance of regression relationship between capitalisation of environmental cost and quality of accounting disclosure, the regression coefficients ( $\beta$ ), the intercept ( $\alpha$ ), and the significance of all coefficients in the model were subjected to the t-test to test the null hypothesis that the coefficient is zero. The null hypothesis state that,  $\beta$  (beta) = 0, meaning there is no significant relationship between capitalisation of environmental cost and quality of accounting disclosure as the slope  $\beta$  (beta) = 0 (no relationship between the two variables). The results on the beta coefficient of the resulting model in table 4.5 shows that the constant  $\alpha = 14.500$  is significantly different from 0, since the p- value = 0.000 is less than 0.05. The coefficient  $\beta = 0.492$  is also significantly different from 0 with a p-value=0.000 which is less than 0.05. This implies that the null hypothesis  $\beta_1 = 0$  is rejected

and the alternative hypothesis  $\beta_1 \neq 0$  is taken to hold implying that the model  $Y = 14.500 + 0.492 (\text{Capitalization of Environmental Cost}) + e$ , is significantly fit. The model  $\text{Quality of Accounting Disclosure} = \alpha + \beta (\text{Capitalization of Environmental Cost})$  holds as suggested by the test above. This confirms that there is a positive linear relationship between capitalization of environmental cost and quality of accounting disclosure. Shen and Huang (2010) carried out a study on An Analysis of Environmental Disclosure of Listed Companies in China based on the content analysis of annual reports of listed companies. They found that there are significant differences among industries in content, quality, and quantity of environmental disclosures. The finding of their study is to improve the environmental disclosures and finally the environmental performances of businesses.

**Table 4.5 Coefficient for Relationship between Capitalisation of Environmental Cost and Quality of Accounting Disclosure**

	<u>Unstandardized Coefficients</u>		<u>Standardized Coefficients</u>	<u>T</u>	<u>Sig.</u>
	<u>B</u>	<u>Std. Error</u>	<u>Beta</u>		
(Constant)	14.500	1.196		12.120	.000
<u>Capitalisation of Environmental Cost</u>	.492	.049	.678	9.952	.000

a. Dependent Variable: Quality of Accounting Disclosure

### Conclusion and Recommendation

The study concludes that capitalisation of environmental cost influences the quality of accounting disclosure of shipping companies in Nigeria. It can be concluded from this study that there exists a positive and significant relationship between capitalisation of environmental cost and quality of accounting disclosure. The regression analysis showed that there is a positive joint relationship  $R=0.648$  between the independent variable capitalization of environmental cost and quality of accounting disclosure.  $R\text{-Square}=0.460$  meaning that capitalization of environmental cost explains 46.0% of quality of accounting disclosure. Further analysis indicated that coefficient of capitalization of environmental cost and quality of accounting disclosure is significant. This implies that capitalisation of environmental cost were statistically significant in explaining the quality of accounting disclosure of shipping companies in Nigeria.

It is therefore recommended that environmental costs should be capitalised or expensed as the most

controversial subjects for accountants as well as financial analyst. Companies should capitalise environmental cost if they are considered to be a cost of the expected future benefits from the assets regardless of whether there is any increase in economic benefits. Cost incurred to prevent future environmental impacts should be capitalised (treated as an asset, providing expected future economic benefits). Capitalization of cost should be allowed if the costs can contribute to additional future economic benefits beyond the originally assessed standard of performance.

### References

- Akerlof, G.A. (1970).**  
The market for lemons: quality uncertainty and the market mechanics. *Journal of Economics*, 2(1): 488–495.
- Bartolomeo, M., Bennett, M., Bouma, J., Heydkamp, P., James, P., & Wolters, T. (2000).**  
Environmental management accounting in Europe: current practice and future potential. *European Accounting Review*, 9(1), 31-52.

- Bassey, E., B., Effiok, S., O., & Okon, E., E. (2013).**  
The impact of environmental accounting and reporting on organizational performance of selected oil and gas companies in Niger Delta region of Nigeria. *Research Journal of Finance and Accounting*, 4(3), 57-73.
- Botosan, C., Plumlee, M., & Xie, Y. (2004).**  
The role of information precision in determining the cost of equity capital. *Review of Accounting Studies*, 9(2), 233-259.
- Burritt, R., L., Hahn, T., & Schaltegger, S. (2002).**  
Towards a Comprehensive Framework for Environmental Management Accounting - Links between Business Actors and Environmental Management Accounting Tools. *Australian Accounting Review*, 12(2), 39-50.
- Campbell, D., Craven B., & Shrivs P. (2003).**  
Voluntary social reporting in three FTSE sectors: A comment on perception and legitimacy. *Accounting Auditing Accountability Journal* 16(4), 558-581.
- Cho, C., & Patten, D. (2007).**  
The role of environmental disclosure as legitimacy tools: A research note. *Accounting organization and society*, 32(7), 639-647.
- Christ, K. L., & Burritt, R., L. (2013).**  
Environmental management accounting: the significance of contingent variables for adoption. *Journal of Cleaner Production*, 41, 163-173.
- Cochran, W., G. (1963).**  
Sampling Techniques, Wiley, New York.
- Cormier, D., & Magnan, M. (1997).**  
Investors' assessment of implicit environmental liabilities, *Journal of Accounting, Auditing and Finance*, 16(2), 215-241.
- Deegan, C., Rankin, M., & Voght, P. (2000).**  
Firms' disclosure reactions to major incidents: Australian evidence. *Accounting forum* 24(1), 101-130.
- Diamond, D., & Verrecchia, R. (1991).**  
Disclosure, liquidity and the cost of equity capital. *The Journal of Finance*, 46(4), 1325-1360.
- Dragomir V. D. & Ilcu E. R. (2008).**  
Corporate governance in the European Union: a timeline of regulatory transformations. *Theoretical and Applied Economics / Conference Supplement*, 154-160.
- Dunk, A. S. (2002).**  
Product quality, environmental accounting and quality performance. *Accounting Auditing and Accountability Journal*, 15(5), 719-732.
- Easley, D., & O'Hara, M. (2004).**  
Information and the cost of capital. *The Journal of Finance* 59(4), 1553-1583.
- Freedman, M. (2006).**  
An analysis of the association between pollution disclosure and economic performance. *Accounting, Auditing and Accountability Journal*, 1(2), 43-58.



- Gray, R., Owen D., & Adams, C. (1996).**  
*Accounting and Accountability*, Europe, Great Britain: Prentice Hall.
- Howes, R. (2002).**  
Environmental Cost Accounting: *An Introduction and Practical Guide*, London: The Chartered Institute of Management Accountants.
- Judge, W., Q., & Douglas, T., D. (1998).**  
Performance implications of incorporating natural environmental issues into the strategic planning process: An empirical assessment. *Journal of Management Studies*, 35(2), 241–262.
- Kelly, B., & Ljungqvist, A. (2012).**  
Testing asymmetric-information asset pricing models. *Review of Financial Studies*, 25(5), 1366–1413.
- Kombo, D., K., & Tromp, L., A. (2006).**  
*Proposal and Thesis Writing: An Introduction*. Nairobi: Paulines Publications Africa.
- Kothari, S., Xu, L., & James E. (2009).**  
The Effect of Disclosures by Management, Analysts, and Business Press on Cost of Capital, Return Volatility, and Analyst Forecasts: A Study Using Content Analyses. *The Accounting Review*, 84(5), 1639–1670.
- Leuz, C., & Verrecchia, R. (2000).**  
The Economic Consequences of Increased Disclosure. *Journal of Accounting Research*, 38, 91–124.
- Mannion, R., F. (1996).**  
Enhancing Corporate Performance through Quality-Driven Pollution Prevention. *National Productivity Review*, 16(1), 25–32.
- Marston, C. L., & Shrives, P. J. (1991).**  
The use of disclosure indices in accounting research: a review article. *British Accounting Review*, 23(3), 195–210.
- McElroy, D. (2007).**  
*Public Information Meeting EPA's Proposed Cleanup Plan: Sutton Brook Disposal Area Superfund Site Tewksbury, MA* June 27.
- Mitchell, R., Agle, B., & Wood, D. (1997),**  
“Toward a Theory of Stakeholder Identification and Salience”, *Academy of Management Review*, 22(4), 853–886.
- Mohamed, T., & Faouzi, P., J. (2014).**  
Does Corporate Environmental Disclosure Affect the Cost of Capital? Evidence from Tunisian Companies. *Global Journal of Management and Business Research*, 14(1).
- Mugenda, A., G. (2008).**  
Social Science Research: Theory and Principles. Acts Press, Nairobi.
- Pramanik, A., Shil, O., & Das, A. (2007).**  
*Environmental accounting and reporting*. New Delhi: Deep publication PVT. Ltd.



**Rugman, A., M., & Verbeke, A. (1998).**

Corporate Strategy and International Environmental Policy. *Journal of International Business Studies*, 29(4), 819-834.

**Schleicher, N. (2007).**

Design and basis for environmental accounting in oil & gas manufacturing sector in Nigeria. *Accounting Journal of Africa*, 100-103.

**Shen, H., & Huang, H. (2010).**

*An Analysis of Environmental Disclosures of Listed Companies in China.*

**Suchman, M., C. (1995).**

Managing legitimacy: strategic institutional approaches. *Academy of Management Review*, 20(03), 577-610.

**U.S. Environmental Protection Agency.**

**(1995a).**

*Environmental Accounting Case Studies: Green Accounting at AT&T*, Washington D.C.: USEPA.

**United States Environmental Protection Agency. (1995b).**

*An Introduction to Environmental Accounting as a Business Tool: Key Concepts and Terms*, Washington, D.C.: USEPA.

**Zhang, H., Kuo, T., Lu, H., & Huang, S. (1997).**

Environmentally Conscious Design and Manufacturing: A State-of-the-Art Survey. *Journal of Manufacturing Systems*, 16(5), 352-371.

# THE AVENGERS: A NEW FACE OF NIGER DELTA MILITANCY

Omon Merry Osiki

Department of History and Strategic Studies

University of Lagos.

## **Abstract**

*The struggle by the Niger Delta Avengers (NDA) or simply the “Avengers” to fight multinational oil companies and draw the attention of the Federal Government of Nigeria and the international community to the environmental degradation in the Niger Delta area of Nigeria signalled yet another phase of insurgency and militancy in the region. Even though the group was somewhat short-lived, its violent activities were felt in Nigeria and in the international community, especially in the spheres of oil exploration, exploitation and marketing. The major reasons for the emergence of the group were political, economic, and possibly self-indulgence on the part of the militants and their sponsors. Interestingly, there is dearth of scholarly literature on their emergence and the consequences of their activities. The reason for this is mainly because the activities of the Avengers were brief but decisive, even though they were part of the larger militancy culture in the Niger Delta. Therefore, my little effort is to bridge this gap in scholarship by analysing their role in the escalation of violent conflicts in the Niger Delta area of Nigeria as well as examine the impact of their activities on peace and security in the ND. I depended on the historical method of research, whereby I prioritised primary and secondary sources of data in the analysis of the activities of the group. I sourced and interpreted newspaper materials as well as secondary data on militancy in the Niger Delta area. My presentation of the data is based on the descriptive and narrative approach as well as a critical examination of information contained in them. On the basis of this the “greed-based theory”, explained by M. Watts, and the “resource control theory”, described by Patricia Hawley, can help to explain the activities of the Avengers and other related groups in the Niger Delta region. From all indications the Avengers' quest to control the resources of their area through violence disrupted the socio-economic and environmental well-being of the people of the region while at the same time it attracted the displeasure of the Federal Government and the multinational oil companies operating in the area. My conclusion is that the Avengers represented a short but significant phase of Niger Delta militancy and the struggle for resource control by the region. Hence, I recommended that the stakeholders should have deployed social, economic and political solutions in tackling the crisis and related ones in the quest for peaceful cooperation in the region. I recommend that more research needs to be done to further earth the social, economic and political dimensions to the Niger Delta agitations during the post-Jonathan era.*

**Keynotes:** Militancy, Niger Delta, Avengers, Oil Exploration, Pollution, Bombing, Insurgency

## **Introduction**

Violent militancy is not strange in the Niger Delta (ND) area of Nigeria due to obvious socio-political, environmental, economic, and strategic reasons.

However, the emergence of the “Avengers” represented yet another important phase of militancy in the region. While the crisis generated by the group might not have substantially

departed from previous crises (Ikelegbe, 2001: 437), the violent approach adopted by the group aggravated the already worsening social and economic situations of the country, especially as they related to crude oil production and exportation. This is because the ND is very central to the economic survival of Nigeria. Yet, scholars have argued that the Nigerian state has not responded enough to the contributions of the region to national development. They believe that this worrisome situation has generated frustration, anger and hostility from the youths of the area against the state and the multinational oil corporations (MNOCs), whose facilities and production have been frequently vandalised and disrupted (Ikelegbe, 2001: 437). While the debate continues, there are limited scholarly efforts devoted to analysing the reasons for and effects of the renewed insurgency in the ND in the post-Jonathan era, represented by the Niger Delta Avengers (NDA) and other similar militant groups. Filling this gap in existing literature would require a critical examination of the activities of the the NDA and their impact on security in the region.

The NDA (or simply the Avengers) have been seen in some quarters as opportunists who felt they had been edged out of the gains of the disarmament regime and the amnesty programme instituted by the government of Umaru Musa Yar'Adua/Goodluck Jonathan. No doubt, their activities were a reminder

of the fact that petroleum in the Nigerian context has produced a combustible politics marked by violence and exploitation. That is why Michael Watts has opined that the annals of oil have been uninterrupted chronicle of naked aggression, genocide and the violent law of the corporate frontier (Watts, 2003, p. 5083; Ukeje, 2001: 337-366; Yang, 2010: 6-7). He concluded that where there is oil, there is likely to be bloodshed. Whatever the case, the emergence of the Avengers opened up a new chapter in the escalating use of violence to address the ND crises. In fact, the aggressive nature of the activities of the NDA meant that violent militancy in the ND assumed a worrisome and more critical condition in the face of dwindling economic opportunities in Nigeria in the first years of President Mohammadu Buhari administration. Hence, the NDA obviously constituted one of the most serious threats to Nigeria's economy and democracy during that period. This preamble is predicated on a careful observation of what happened in the ND region at that time.

To elucidate the issues involved in the emergence of the NDA as well as the effects of their activities on the socio-economic and environmental spheres of the Nigerian state, I begin the discussion with a brief introduction of militancy in the NDA. This is followed by a review of relevant literature and theoretical framework associated with militancy and conflicts in the ND. Thereafter, I look at pre-Avenger

militancy in the ND. This is followed by an examination of the main demands of the NDA as well as the effects of their activities on peace and security, the economy and environment of Nigeria. Lastly, I look at government's reactions to the activities of the group as well as a summary of key issues discussed in the study.

### **Review of Relevant Literature and Theoretical Framework**

The conflict in the ND has been attributed to innumerable factors, with multiple interpretations ranging from reactions to deprivation, environmental degradation, marginalisation, more access to oil revenue, aftermath of corruption and so forth (Osaghae, 1995: 325-344; Omeje, 2004: 425-440; Omeje, 2005: 321-334; Khan, 1994). Some scholars have attributed the outbreak of conflicts in the area to the result of cumulative effects of the synergetic interplay of conflict-generating factors that worked together or individually to tilt state-society relations towards the outbreak of violence (Idemudia and Ite, 2006: 391-406). Others have seen the crisis as a reflection or reactions of the communities in the ND to the policies, activities and programmes of the government and oil companies, which disadvantaged the region (Ikelegbe, A. (2001: 438-439; Adunbi, 2011: 101-120). On her part, Caroline Ifeka (2006: 721) posits that "small" wars that are triggered by conflict between communities and transnational corporations or state actors for control

over natural resources are a common occurrence in post-Cold War era. Without necessarily limiting her analysis to the ND, Ifeka also attributed some of the causes of the conflicts to marginalisation and injustice in the allocation and distribution of resources among the units in a state.

Conversely, the economy of war thesis challenges the conventional wisdom that civil wars and insurgencies originate in perceptions of relative deprivation and social injustice held by insurgent groups (Ukiwo, 2007: 589; Tonwe, Ojo and Aghedo, 2011: 45-66; Ikelegbe, 2005: 490-516). Accordingly, Paul Collier (2000: 91-112) and others believe that people rebel not because of the existence of historical and social grievance but because of the opportunities available for them to do well out of war (Orogun, 2010: 459-507). However, with specific reference to the ND, Andrew Ikelegbe (2006: 209) dismisses the economy of war thesis on the ground that it may actually be a by-product and not a cause of conflict.

There is also the greed-based theory, which situates the ND crisis within the framework of the insatiable desire of some youths and leaders of the area to accumulate wealth from oil revenue, exploit multinational oil companies and the state as well as loot the resources of their communities. Conventionally, there is no doubt that at the heart of the Nigerian petrol industry is the quest by many for "unearned income," access to oil rents and greater share in the distribution of oil revenue

(Watts, 2003: 642; Ebiede, 2011: 139-151). Resources-induced conflicts are historically not borne out of ingrained hatred or an attempt to disrupt the economic base, but of a complex web of the struggle for identity, inclusion or clamour for equitable appropriation of the fruit of economic endowment on human and environmental development of the “excluded” or a marginalised people. However, critics of this theory have averred that it is not holistic enough to address the issues of socio-economic and political marginalization, social exclusion, crisis of identity and citizenship, and inter-group inequality vis-à-vis the ND crisis (Ukiwo, 2007: 590). Therefore, the Resource Control Theory (RCT) by Hawley and Vaughn (2003) is important in analysing militancy in the Niger Delta area. The theory identifies coercion, attachment orientations, aggression, pro-social strategies, and so on as important elements in the understanding of resource-based violence across the world. Both the greed-based theory and the RCT are juxtaposed in the analysis of the activities of the Avengers in this study.

In all of this, there has been a fusion of political, economic, environmental, cultural, ethnic, and security issues in the escalation of the ND conflict. For instance, government's inconsistency, lackadaisical or languid enforcement, and poor implementation of oil policies have not helped matters. This means

that many of the dynamics that trigger conflict in the ND are not restricted to oil exploration *per se*, but also from other related issues such as the centralisation of oil revenue and pre-oil political rivalry among the ethnic configurations in the area. There are also reactions to perceived and real neglect by the government, political exclusion of ND communities, the politics of divide-and-rule by the multinational oil companies and other related issues (Idemudia and Ite, 2006: 393). This explanation resonates with the argument by Ukoha Ukiwo (2007) that insurgency and militancy in the ND were the consequence of longstanding experiences of political, economic and socio-cultural marginalisation, injustice, inter-group inequalities and that militant groups emerged as a result of the failure of the state and oil companies to respond to peaceful protests in previous decades.

Nevertheless, the emergence of the Avengers could be better understood within these integrated explanations. Like their predecessors, the Avengers seem to have emphasised the fact that decades of relatively peaceful resistance did not persuade the state to address the socio-economic and environmental concerns in the ND or to concede resource control to oil-producing communities. Hence, they appear to have developed a veritable theodicy of neglect, suffering and marginalisation to rationalise their violent activities (Ifeka, 2006: 726). This position agrees with G. Simmel's

(1955; Ifeka, 2006: 727) position that conflict is designed to resolve divergent dualisms of achieving some kind of unity and as a pivotal form of social interactions. The point being made by Simmel is that militant youths sometime believe in violent means to secure otherwise unattainable political ends as well as an eventual political consensus. That is why though only a minority of youth become militant, many members of their parent communities, whether overtly or covertly, support their use of force for “collective good” (Ifeka, 2006: 727-728).

### **Pre-Avengers Militancy in the Niger Delta**

The emergence of militancy in the ND is as varied as the ethno-linguistic complexity of the region. In the 1970s and 1980s, the communities in the ND as well as non-violent groups (such as the Isoko Development Union (IDU) in the Isoko area, the Urhobo Progressive Union (UPU), the Ijaw National Congress (INC), the Movement for the Survival of Itsekiri Ethnic Nationality (MOSIEN) and others disparately and uncoordinatedly articulated grievances against the MNOCs and the Nigerian state. Groups that were more militant started to emerge in the 1990s as a mobilisational platform of popular struggle against obvious neglect, youth unemployment, environmental degradation, and lack of basic social amenities in the ND (Ikelegbe, 2001: 438). However, with the formation of the Movement for the

Survival of Ogoni People (MOSOP) in the early 1990s, community and ethnic agitations in the ND became more aggressive. Hence, groups such as the Restoration of Actual Rights of Oil Producing Communities, Concerned Youths of Oil Producing States, Ethnic Minority Rights Organisation of Nigeria, Movement for the Protection and Survival of Oil, Mineral and Natural Gas Producing States, Niger Delta People's Movement for Self-Determination and Environmental Protection, Pan Niger Delta Revolutionary Militia and others emerged in the 1990s. They demanded greater share of oil revenues. They also agitated for the MNOCs to be alive to their responsibilities to their host communities.

Specifically, the MNOCs were accused of refusing to employ indigenes of oil producing communities. They were criticised for marginalisation in their employment and contracting, and social “irresponsibility” towards the problems and needs of their host communities. Besides, the MNOCs were also accused of arrogance, poor and delayed compensation for lands acquired and destroyed by spillages, mistreatment of indigenes of their host communities and more especially their support of state repression and recourse to private and public security to intimate members of their host communities (Ikelegbe, 2001: 452-453). In all, the ND area moved from relatively peaceful enclave in the 1960s to an area that was prone to sporadic low-level conflict in the



1980s, and sadly to an outright unstable area with persistent violence since the return to democracy in the 1990s (Idemudia and Ite, 2006: 391; Ifeka, 2001: 99- 105).

However, in the 2000s with the democratic dispensation in the country the level of militant agitation in the ND blossomed. The prevailing democratic atmosphere afforded youths in the area to agitate for greater share and allocation of revenue to the ND. Thus, militant groups such as the Movement for the Emancipation of the Niger Delta (MEND), which was founded around 2005, the Niger Delta Peoples Volunteer Force (NDVF) and others became prominent. Indeed, some of their leaders such as Asari-Dokubo and others were harassed and arrested by the government of Olusegun Obasanjo. Nevertheless, the self-styled *Muhajid* Asari-Dokubo was popular for forming the very influential NDPVF that held sway as the dominant or perhaps most notorious militia outfit in the early 2000s. Indeed, the group launched widespread violent “Operation Locust Feast” in 2004 and targeted oil companies and their workers in the ND (Anugwom, 2011: 8). Interestingly, it was believed that the repressive state institutions were handmaidens of powerful multinational corporations (Owolabi and Okwechime, 2007: 1-40). On the other hand, MEND's overarching goal was to destroy the ability of the Nigerian authorities to export oil or meet its production quotas (Anugwom, 2011: 9) and the objective of “Operation Black Mamba” cannot be

forgotten in a hurry (Agbo and Ero, 2006: 24).

While government succeeded in its harassment of militants, destruction of oil installations and vandalism affected government revenue from crude oil. Fortunately, the administration of Umaru Yar'Adua/Goodluck Jonathan tried to douse the tension by granting amnesty to repentant militants who submitted their weapons in a disarmament programme organized by the Federal Government. Consequently, some youths from the area were placed on monthly stipends while others received scholarships and grants to train within and outside Nigeria.

In addition, especially during the administration of Goodluck Jonathan, former militant leaders such as Government Ekpemupolo (Tompolo) and others received contracts from the Federal Government to protect oil installations in their areas. However, when Jonathan lost the presidential election in 2015 and Mohammadu Buhari was sworn in, it was clear that the days of “pampering” of the ex-militants were over. For instance, the new administration gave indications that it was going to restructure the amnesty programme. In the same vein, it terminated contracts to ex-militants and indeed Tompolo was declared wanted by the state for failing to honour a court invitation. His assets were also frozen while a bounty was placed on his head for whosoever would bring him to answer his charges.

Accordingly, the planned end of the amnesty programme as well as the

fight against corruption is believed to be a contributory factor to the re-emergence of militancy in the ND area. Sadly, observers have pointed out the fact that the action seemed to have alienated the already alienated unemployed youths, some of whom were already used to the militant tradition of “boys’ revolts” (Ifeka, 2006: 723).

### **The Main Agendas of the Avengers**

Generally, militant agitations in the ND have centred on accelerated development and improved quality of life as compensation for the region's contributions to national revenue and progress. However, NDA had its initial ten demands, which were:

- i. Immediate implementation of there port of the 2014 National Conference report, failure of which Nigeria will forcefully break-up.
- ii. President Buhari, the Director-General of the State Secret Service and the All Progressives Congress (APC) candidate in Bayelsa State, Timipre Sylva, should apologise to the people of the Niger Delta region and family of the late Chief DSP Alamieyeseigha for killing him with intimidation and harassment because of his party affiliation.
- iii. Ownership of oil blocs in Nigeria must reflect 60% for the oil-producing people and 40% for the non-oil producing people.
- iv. The only Nigerian Maritime University sited in the most

appropriate and befitting place-Okerenkoko in Delta State, must start the 2015/2016 academic session immediately.

- v. The Minister of Transportation, Rotimi Amaechi, should apologise to the Ijaws and the entire Niger Delta people for his careless and reckless statement about the citing of the University in Okerenkoko.
- vi. Ogoniland and all oil-polluted lands in the Niger Delta must be cleaned up, while compensation should be paid to all oil-producing communities.
- vii. Radio Biafra director and the Indigenous Peoples of Biafra (IPOB) leader, Mazi Nnamdi Kanu, should be released unconditionally.
- viii. The Niger Delta Amnesty programme must be well funded and allowed to continue to run effectively.
- ix. All APC members indicted for corruption should be made to face trial like their counterparts in the People's Democratic Party.
- x. All oil multi-nationals and foreign investors should observe these demands, as their business interests in the country will be first targeted (*TheNews*, May 10, 2016).

Later on, the Avengers extended their demands to include the pursuit of self-determination and a sovereign state for the ND people. They also demanded for a fairer share of revenue from the

sector for oil-producing communities (Amaize, Yafugborhi and Brisibe, 2016; Amaize and Perez, 2016). In all of these the NDA raised the tempo and content of agitation as well as the pace and strategy of destruction in the ND. Indeed, while some of their demands may be termed ridiculous, violent physical action in form of threats and actual disruptions of oil production and bombing of oil installations and platforms has characterised the ND agitation since the emergence of the Avengers. Interestingly, the group seems to have utilised this approach as a bargaining tool to depict the enagement of the ND and the need for the administration of Buhari to urgently negotiate with its members and implement its demands.

While some analysts have regarded these demands as “recycled but legitimate grievances,” others have termed the group as mere “scavengers,” “opportunistic militants,” and chided them for mockingly echoing the acronym of the Nigerian Defence Academy (Ifowodu, 2016). Specifically, Dr. Junaid Mohammed, outspoken Northern politician decried the activities of the Avengers and asked President Muhammadu Buhari to treat the group as terrorists and mete out appropriate military action against it as it is doing to Boko Haram insurgents in the North. He also said it was wrong for the Buhari administration to try to appease the Niger Delta militants while fighting a similar terrorist group in another part of the country. Moreover, he called on Buhari to crush the

Avengers to serve as a deterrent to would-be terrorists. He also recommended that the government should fish out and punish adequately the sponsors of the militants. Regrettably, Dr. Mohammed described the emergence of the Avengers as “a continuation of the instrument often used by South-South politicians to intimidate leaders from the north and their political opponents” (Daniel, 2016). Expectedly, the militants denied the claim that politicians were funding them. Rather, they argued that it was their “civic duty” required of them to liberate their people from slavery (Amaize, 2016).

### **The Effects of the Activities of the Avengers**

There is no doubt that the activities of the Avengers have adversely affected the environment and economy of the ND and Nigeria. The socio-economic, environmental and political effects of these activities have been as complex as they are variegated. Certainly, their bombing of oil installations have continued to pollute and destroy the environment and impoverish the people. There were spectacular attacks on offshore and onshore facilities and these attacks were endemic and perpetrated at will. Moreover, pipeline breaks due to vandalism and sabotage increased since the amnesty programme was put in place. In addition, product loss (in metric tons) due to pipeline ruptures steadily increased. This was a reminder of the days of MEND (Watts, 2007: 637-660).

An examination of some of the attacks by the Avengers will suffice to illustrate their destructive tendencies. For instance, in May 2016 the militant group claimed responsibility for the bombing of oil facilities owned by Chevron Nigeria Limited in Warri South-West Local Government Area of Delta State (Dania, 2016). In the same May 2016, the militant group listed some oil blocs allegedly owned by former Vice President Alhaji Atiku Abubakar, former Minister of Defence, Gen. Theophilus Danjuma, ex-Minister of Petroleum, Alhaji Riwalnu Lukman, other Northerners and South-Westerners in ND region. Thereafter, they issued them a two-week ultimatum to shut down their operations and evacuate the workers from the locations or have them blown up. The group alleged that 90% of oil blocs were allocated to individuals from northern Nigeria (Amaize and Brisibe, May 12, 2016).

Similarly, on June 22, 2016 the police authorities confirmed that a facility belonging to Shell Petroleum Development Company (SPDC) at Awarra, Ohaji/Egbema Local Government Area of Imo had been destroyed by the militant group. Prior to the attack the Trans Niger Pipeline (TNP), which runs through Awara, Imo State at the Assa-Rumuekpe line was shut for repairs on June 8, 2016 following a leak at Okolo launch, Bonny in Rivers State (*Vanguard*, June 23, 2016). In the same vein, on July 6, 2016 the militant group was alleged to have blown up the Nigerian National

Petroleum Corporation (NNPC) pipeline at Eleme, Rivers State. This led to disruption of supply to the Nigeria Liquefied National Gas (NLNG) (Amaize, Nwabughiohu, Yafugborhi and Brisibe, 2016). However, the group denied responsibility for the attack (*Vanguard*, July 7, 2016). In addition, the militant group blew up three Chevron Nigeria Limited (CNL) manifolds (RMP 22, 23 and 24) in Digbolo, near Dibi in Warri North Local Government of Delta State. The affected manifolds were crude oil platforms that supplied crude to Chevron Escravos Terminal (*Vanguard*, July 7, 2016, Ede, 2016). The cost of this mayhem was tremendous and affected every sector of the Nigerian state to the extent that one analyst described them as “economic terrorists” because of the “trail of kept promises and a crippled economy” and their penchant to annihilate “the largest country in Africa” (Egbujo, 2016).

Another major effect of the activities of the Avengers and other militants in the ND is that they succeeded in further worsening the precarious economic situation in the country (Yafugborhi, 2016; *Punch*, July 7, 2016; Omonobi, 2016). In specific terms, the NDA's sabotage of pipelines and attacks on installations had hit crude production, forcing output down to about 1.4 million bpd, instead of a budgeted-for 2.2 million bpd (*Vanguard*, June 6, 2016). Indeed, disruption in oil production endangered the economic security of the Nigerian state. Given the mono-cultural nature of

the Nigerian economy, it is understandable how and why the activities of the Avengers have been so harmful to the fiscal health of the economy of Nigeria. Hence, Governor Ifeanyi Okowa of Delta State in June 2016 cried out that the state had joined the number of states in the federation

unable to meet their obligations to their citizens, especially workers. In fact, he declared that the impact of the renewed destruction of oil assets in the state had gone so bad that the state was unable to pay salaries regularly anymore. According to him,

*With the situation, we have in our hands, we are not in position to pay workers regularly anymore. If we produce our normal volumes, we won't have it this bad. We have had to reduce support to the councils. And apart from poor income from Federation Account, IGR has also gone down because money is not circulating. I do know that we were receiving reasonable Pay As You Earn, PAYE of up to N1.5bn and N1.6bn monthly. That has gone down. We should realise there's a challenge. Political office holders, traditional rulers should build peace. Delta State has been on the news for the wrong reasons and that's not where we want to be (Yafugborhi, June 30 2016).*

Irrked by the worrisome development, the governor on June 29, 2016 convened a stakeholders meeting tagged, “creating a peaceful atmosphere for the development of Delta State and the Niger Delta Region.” At the meeting, the governor reiterated that Nigeria had been in financial crisis since 2015 over dwindling oil prices, but observed that increase crude oil production would have helped cushion the impact but instead the country was faced with destruction of oil assets. Specifically, he observed that dwindling oil prices and destruction of oil assets had grave consequences on Delta State because of its dependence on oil revenues. In particular, the governor disclosed that the state used to receive up to N20 billion monthly allocations from Abuja,

but that their share had reduced to less than N3.4 billion during the first half of 2016. Consequently, he declared that the capacity of the state to pay salaries regularly had been hampered because the Internally Generated Revenue (IGR) was not enough to offset the shortfall (Yafugborhi, June 30 2016). In the same vein, a non-governmental group, Hope for Niger Delta Campaign, HNDC, based in The Netherlands condemned the attacks on oil installations in the ND region by NDA and the described the development as not in the interest of the region (Ebegbulem, June 30, 2016).

Moreover, the manner of conduct of the struggle and aggression of the Avengers posed a great challenge to state authority in Nigeria. The extreme method of the Avengers



reflected in their armed confrontation with state security agencies and by their bomb-and-hide tactic. This further compounded the challenges that already faced ordinary Nigerians battling with pervasive economic crisis and recurring socio-economic hardship such as fuel scarcity, inflation, and increase in the pump prices of refined petroleum products

Unfortunately, the activities of the Avengers have further threatened the precarious energy security in Nigeria and countries that depend on Nigeria's crude oil and gas. Similarly, the activities of the avengers were also blamed on the epileptic power supply in Nigeria between March and June 2016 as well as the inability of many state governors to pay workers' salaries due to the low revenue generated in the oil sector as a result of the attack on pipelines (Amaize, Johnson, Yafugborhi, Brisibe and Idio, 2016). In a way, the world has felt the impact of the storm of violence provoked by the Avengers. Indeed, in fantastically daring statements between May and July 2016, the Avengers claimed they were capable and ready to cripple the oil industry (Ebegbulem, June 30, 2016). In fact, by the month of June the escalation of attacks became worrisome to keen observers who feared the disastrous consequences of those attacks on the economic, political and environmental health of the ND. Moreover, the ruthless destruction and bombing of pipelines posed a grave threat to the ND environment and ecosystem upon which the inhabitants

of the region depended for their livelihood and sustenance (Owolabi and Okwechime, 2007: 1-40)..

On the other hand, the activities of NDA appear to have created ripple effects in the region. Similar militant groups have now emulated the activities of the Avengers. In June 2016, a new militant group, the Joint Niger Delta Liberation Force (JNDLF), vowed to attack strategic targets across Nigeria. The JNDLF declared it would carry out its threat with "missiles," fight troops sent to the delta to bolster the protection of key infrastructure and would hit all the infrastructure that were built with oil and gas monies in Nigeria. The list of targets included the presidential villa, government ministries, parliament, the state-run oil firm and the Central Bank of Nigeria (CBN) in Abuja. They also vowed to destroy the offices of oil majors and the military base. Indeed, the group boasted, "We will make the federal government and oil companies suffer as they have made the people of the Niger Delta region suffer over the years from environmental degradation and environmental pollution" (*Vanguard* June 6, 2016). However, the NDA was reported to have admonished the JNDLF not to derail to focus of the struggle but to "dry their gunpowder" because the "war is on oil installations" and not on destruction of social infrastructure (Amaize, Oyadongha, Yafugborhi, Brisibe and Omafuaire, 2016).

In the same vein, another militant group, the Niger Delta Sea Commandos (NDSC) emerged in June

to give fillip to the activities of the Avengers. In one of its releases, the militant group urged President Muhammadu Buhari to discontinue his

“pretentious plea” to militants to cease bombing oil and gas facilities and commence dialogue with stakeholders to avert looming disaster. The group added:

*When will Nigeria grant Niger Delta autonomous state? Buhari should not play politics with Niger Delta's demands. If he plays with us, we will ground his government. Delay is dangerous. We are not interested in any plea. Who told Buhari that Nigerians do not have other country than Nigeria? Niger Deltans are not part of Nigeria he is referring to because we belong to Niger Delta Republic. Buhari should lead the negotiation team. We want him in the creeks. Buhari should not expect our oil to stabilize Nigerian economy. That is a thing of the past (Amaize, Yafugborhi and Brisibe, June 27, 2016).*

Nevertheless, it would appear that the activities of the Avengers and other militant groups in the ND would serve as a compelling force to attract Federal Government's attention to a region that has felt perpetually marginalised. The Federal Government should be more concerned about environmental issues and development in the region and should seek greater improved relations and cooperation with leaders of the region

### **Government's Reactions to the Demands and Activities of the Avengers**

The demands of the Avengers and other militant groups in the ND have so far received cautious reactions from Buhari administration giving credence to the impression that most of the demands of the group would eventually be ignored. Initially, the Federal Government deployed troops to the creeks to stop the destruction of national economic assets

and spate of sabotage being perpetrated by the Avengers. However, these suppressive, brutal and coercive strategies achieved minimal results. The nature of this initial response was not surprising given the centrality of oil to Nigeria's economy, infrastructure, politics, and by extension its survival. Hence, both local and international groups called on the federal government to apply caution in the resolution of the crisis. For instance, on June 2, 2016 the British High Commissioner to Nigeria, Paul Arkwright cautioned the Federal Government over military option as a measure to tackle the resurgence of militancy and other criminality in the Oil-rich Niger Delta region. The envoy advocated for dialogue as part of a comprehensive approach that should be adopted by Nigerian government to address the situation, adding that force alone may not bring about a lasting solution to the Niger Delta issue (Olatunji, June 3, 2016). Some opinion

leaders in Nigeria also encouraged the Federal Government to take a critical look into the issue and handle it with diplomacy (*Vanguard*, July 7, 2016; Amaize, June 3, 2016; Ike, July 7, 2016).

Accordingly, the federal government made some frantic efforts to bring traditional leaders on board to find an end to the activities of the Avengers. For instance, on June 29, 2016, President Buhari invited all Chairmen of State Councils of Traditional Rulers from the ND to a parley in Abuja. The meeting afforded stakeholders the opportunity to discuss how to resolve the remote and immediate causes of the ND crises with special focus on the destruction of oil installations in the region (*Vanguard*, June 27, 2016).

However, President Buhari's archetypal unyielding and uncompromising stance on lawlessness has so far not doused the activities of the Avengers. For instance, in one of his reactions to the wanton bombing of oil installations by the Avengers, President Buhari remarked that the militants should know that the constitution specified what they should get and "I assure them there would be justice" (Amaize, Nwabughio, Yafugborhi and Brisibe, July 7, 2016; Amaize, Johnson, Yafugborhi, Brisibe and Idio, July 9, 2016). Probably for the sake of the democratic experience in the country, the Federal Government has variously been admonished to toe the line of dialogue instead of the perceived tendency towards a military disposition. Expectedly, government

has been very sluggish and cautious on the options of dialogue, negotiation and granting concessions to the group to forestall a bandwagon effect. Fortunately, in June 2016 government withdrew the repressive method in favour of a possible rapprochement with the Avengers and other militant groups in the ND area. While events unfold, it is safe to guess that Buhari's sobriquet of a "no-nonsense man" may be the albatross for the lawlessness of the Avengers. Nevertheless, the Avengers' nemesis may be their stubbornness to end hostility and embrace peace

### **Conclusion**

From the foregoing, it is obvious that the activities of the Avengers in the ND are critical and pose grave economic and security challenges for the Nigerian state and the inhabitants of the region who bear the brunt of environmental degradation and pollution that arise from destruction of oil installations. For one, opinions are divided on how to separate the frustration that has compelled militants to destroy state infrastructure, resurgence of militancy in the ND and the criminality aspects of militancy in the region. However, there is no doubt that the development dilemma that the on-going crisis in the ND region presents for the Nigerian state is inimical to the change mantra of the current administration in the country. There is no gainsaying the fact that the issue of oil and oil-wealth has been central to the development of

Nigeria since the country became a largely mono-export-economy. In fact, the region is the source of the oil wealth that is sustaining the Nigerian economy (Anugwom, 2011: 3-26).

It can also not be denied that while the Avengers were not the first aggressive militants in the ND, their entrance has raised the extent of aggressive destruction of oil installations and platforms in the area. Indeed, unlike many previous militant groups the emergence of the Avengers cannot be divorced from the fallout of the 2015 Presidential Election in Nigeria lost by former President Goodluck Jonathan (Okpare, July 18, 2016).

Interestingly, their demands and activities have been propelled by the old repugnant culture of excessive venality, corrupt form of petro-capitalism and profiteering among the political class in the country. Sadly, their attack on oil installations has posed a highly combustible problem and has plummeted oil revenue to create a perfect storm for an economy in ruins (Kapucinski, cited in Watts, 2003: 5090). Hence, there is the need for the federal government to be more responsive to and make its oil policy and legislation more pragmatic in addressing the demands and peculiar needs of the oil-producing areas of the ND. The impression that the Nigerian state is more concerned about and interested in petro-dollar and the security of oil production and the safety

of oil installations than the security of the inhabitants of the ND and the well-being of the inhabitants has to change. Overall, there is the need for the Buhari administration to be more proactive and more liberal, without compromising the security of Nigeria, in its approach to the resolution of the crisis and end attacks on oil installations in the face of dwindling oil revenues. Similarly, the government must be very careful not to make heroes of seemingly “freestyling freedom fighters” by taking a holistic approach to resolving the crisis.

## References

**Adunbi, O. (2011).**

“Oil and the Production of Competing Subjectivities in Nigeria: 'Platforms of Possibilities' and 'Pipelines of Conflict,’” *African Studies Review*, 54/3.

**Agbo, A. and Ero, A. (20 March 2006).**

“Operation Black Mamba begins,” *Tell* (Lagos).

**Amaize, E., Nwabughogu, L., Yafugborhi, E. and Brisibe, P. (July 7, 2016).**

“Buhari says Nigeria's unity not negotiable as Avengers bombs NNPC pipeline,” *Vanguard*.

**Amaize, E., Johnson, D., Yafugborhi, E., Brisibe, P., and Idio, E. (July 9, 2016).**

“Why we are not talking with Avengers-FG,” *Vanguard*.

**Amaize, E. (June 3, 2016).**

“We can't destroy ourselves in order to make a point, Okowa tells ND Avengers,” *Vanguard*.

**Amaize, E., Yafugborhi, E. and Brisibe, P. (June 27, 2016).**

“Stop begging, start dialogue, militants tell Buhari,” *Vanguard*.

**Amaize, E. Nwabughio, L. Yafugborhi, E. and Brisibe, P. (July 7, 2016).**

“Buhari says Nigeria's unity not negotiable as Avengers bombs NNPC pipeline,” *Vanguard*, (Lagos).

**Amaize, E., Oyadongha, S., Yafugborhi, E., Brisibe, P. and Omafuaire, A. (June 6, 2016).**

“Militants renew vow to set off missiles,” *Vanguard*.

**Amaize, E., Johnson, D., Yafugborhi, E., Brisibe, P. and Idio, E. (July 9, 2016).**

“Why we are not talking with Avengers -FG,” *Vanguard*.

**Amaize, E. (June 28, 2016).**

“We're agitators, not terrorists, – Delta militants blast Mohammed,” *Vanguard*.

**Amaize, E., Yafugborhi, E. and Brisibe, P. (June 26, 2016).**

“Avengers reply Buhari, demand referendum,” *V a n g u a r d* (Lagos).

**Amaize, E. and Brisibe, P. (May 13, 2016).**

“Militants ask UN to free Niger Delta people, to display currency, flag, passport,” *Vanguard*.

**Amaize, E. and Brisibe, P. (May 12, 2016).**

“Militants threaten Atiku, Danjuma, Lukman, other oil bloc owners,” *Vanguard*.

**Anugwom, E. (2011).**

“Something Mightier: Marginalization, Occult

Imaginations and the Youth Conflict in the Oil-Rich Niger Delta,” *Africa Spectrum*, 46/3.

**Collier, P.**

“Doing well out of war: an economic perspective.” In M. Berdal and D. Malone (eds.). *Greed and Grievance: Economic agendas in civil wars*. Colorado: Lynne Rienner, Boulder.

**Dania, O. (May 16, 2016).**

“Ukori flays bombing of oil facilities in Gbaramatu,” *Vanguard*, (Lagos).

**Daniel, S. (June 27, 2016).**

“N/Delta Avengers instrument by S-South politicians to intimidate leaders- Junaid,” *Vanguard*, (Lagos).

**Ebiede, T.M. (2011).**

“Conflict Drivers: Environmental Degradation and Corruption in the Niger Delta Region,” *African Conflict and Peacebuilding Review*, 1/1.

**Ede, A. (July 8, 2016).**

“Avengers bomb Chevron's oil facilities again, attack guards,” *Punch*, (Lagos).

**Ebegbulem, S. (June 30, 2016).**

“Avengers attacks on oil installations not in interest of – Delta region-group,” *Vanguard*.

**Egbujo, U. (June 18, 2016).**

“Buhari vs The Niger Delta Avengers: Time to take the bull by the horns,” *Vanguard*.

**Hawley, Patricia and Vaughn, Brian E. (2003).**

“Aggression and adaptation: The bright side to bad behavior.” *Merrill-Palmer Quarterly*, 49(3):239-244.



- Idemudia, U. and Ite, U.E. (2006).**  
 “Demystifying the Niger Delta Conflict: Towards an Integrated Explanation,” *Review of African Political Economy*, 33/ 109.
- Ifeka, C. (2001).**  
 “Oil, NGOs and youths: Struggles for resource control in the Niger Delta,” *Review of African Political Economy*, 28(87).
- Ifeka, C. (2006).**  
 “Youth Cultures & the Fetishization of Violence in Nigeria,” *Review of African Political Economy*, 33/110.
- Ifowodu, O. (May 25, 2016).**  
 “Niger Delta scavengers,” *Vanguard*, (Lagos).
- Ike, R. (July 7, 2016).**  
 “Militancy: This war won't pay Niger Delta agitators-Nwankpa,” *Vanguard*.
- Ikelegbe, A. (2001: 437).**  
 “Civil Society, Oil and Conflict in the Niger Delta Region of Nigeria: Ramifications of Civil Society for a Regional Resource Struggle,” *The Journal of Modern African Studies*, 39/3.
- Ikelegbe, A. (2005).**  
 “State, Ethnic Militias, and Conflict in Nigeria,” *Canadian Journal of African Studies/Revue Canadienne des Études Africaines*, 39/3.
- Ikelegbe, A.**  
 “The economy of conflict in the oil-rich Niger Delta region of Nigeria,” *Nordic Journal of African Studies* 14/2.
- Khan, S.A. (1994).**  
*Nigeria: The Political Economy of Oil*, Oxford: Oxford University Press.
- Okpare, O. (July 18, 2016).**  
 “Niger Delta Avengers blow up Shell facility again,” *Punch*.
- Olatunji, D. (June 3, 2016).**  
 “Niger Delta Avengers: Britain cautions FG over military option,” *Vanguard*.
- Omeje, K. (2004).**  
 “The state, conflict and evolving politics in the Niger Delta, Nigeria,” *Review of African Political Economy*, 101.
- Omeje, K. (2005).**  
 “Oil conflict in Nigeria: Contending issues and perspectives of the local Niger Delta people,” *New Political Economy*, 10(3).
- Omonobi, K. (June 30, 2016).**  
 “Security Challenges: Buhari vows to end all forms of terrorism,” *Vanguard*.
- Orogun, P.S. (2010).**  
 “Resource control, revenue allocation and petroleum politics in Nigeria: the Niger Delta question,” *GeoJournal*, 75/5.
- Osaghae, E.E. (1995).**  
 “The Ogoni uprising: Oil politics, minority agitation and the future,” *African Affairs*, 94(36).
- Owolabi, O. and Okwechime, I. (2007).**  
 “Oil and Security in Nigeria: The Niger Delta Crisis,” *Africa Development / Afrique et Développement*, 32/1.

**Punch (July 7, 2016).**

“Militants' activities damaging Niger Delta, says aide.”

**Simmel, G. (1955).**

*Conflict and the Web of Group-Affiliations*; translated by Reinhard Bendix, Glencoe, Illinois: The Free Press, 1955.

**Tonwe, D. A., Ojo, G.U. and Aghedo, I. (2011).**

“Greed and Grievance: the Changing Contours of Environmentalism in Nigeria's Niger Delta Region,” *Journal of the Historical Society of Nigeria*, 20.

**TheNews (May 10, 2016).**

“Niger Delta Avengers 10 Point Demand for Peace,” Lagos.

**Ukeje, C. (2001).**

“Youths, Violence and the Collapse of Public Order in the Niger Delta of Nigeria,” *Africa Development/ Afrique et Développement*, 26/1/2.

**Ukiwo, U. (2007).**

“From 'Pirates' to 'Militants': A Historical Perspective on Anti-State and Anti-Oil Company Mobilization among the Ijaw of Warri, Western Niger Delta,” *African Affairs*, 106/425.

**Vanguard (July 7, 2016).**

“Avengers hits Chevron again, blows up 3 manifolds.”

**Vanguard (July 7, 2016).**

“Avengers plans to chase Chevron from N- Delta- Ayiri Emami.”

**Vanguard (June 23, 2016).**

“Police confirm attack on Shell facility in Imo.”

**Vanguard (June 6, 2016).**

“New Niger delta militant group warns of widespread attacks.”

**Vanguard, (July 7, 2016).**

“Stop blowing oil pipelines or face the wrath of God, says cleric.”

**Vanguard, (June 27, 2016).**

“Niger Delta Emergency Security Summit postponed.”

**Watts, M. (2003).**

“Economies of Violence: More Oil, More Blood,” *Economic and Political Weekly*, 38/48.

**Watts, M. (2007).**

“Petro-Insurgency or Criminal Syndicate? Conflict & Violence in the Niger Delta,” *Review of African Political Economy*, 34/114.

**Yang, C. (2010).**

“Less Blood for Oil: Nigeria's Fragile Amnesty,” *Harvard International Review*, 31/4.

**Yafugborhi, E. (June 30 2016).**

“Attack on oil installations: We can't pay salaries anymore, Okowa cries,” *Vanguard*.

**A CRITICAL INVESTIGATION INTO THE USE OF PRAYER  
MOUNTAINS AMONG “ALADURA” CHRISTIANS OF SOUTHWEST,  
NIGERIA**

**Olukayode Kehinde Ayoola, M.A.**

**And**

**Michael Adeleke Ogunewu, Ph.D**

**Faculty of Theological Studies,  
Nigerian Baptist Theological Seminary,  
Ogbomoso**

**lekeogunewu@gmail.com**

**08023891778**

**Abstract**

*The practice of marking out certain sacred places for prayer has become a prominent feature of Aladura Christianity. The belief of adherents of these churches is that where one prays determines largely the efficacy or otherwise of the prayer and/or how soon it would be answered. Consequently, certain sacred places are set aside for prayer. One of such places is the many Aladura prayer mountains, which litter the nook and crannies of southwest, Nigeria. However, this practice has been a subject of controversy among Christians. Some Christians, especially those of other denominations, do not see any need for the use of mountains in prayer. Consequently, they often deride the Aladura, for indulging in practices which according to them portray Christianity in bad light. This study therefore conducted an investigation into this practice, with the aim of ascertaining its relevance or otherwise within Christianity. It adopted the phenomenological and analytical approach, employing oral interview and participant observation as tools for obtaining data and relevant literature were also consulted. The Ikoyi and Olorunkole Prayer Mountains of the Christ Apostolic Church (CAC) and the Cherubim and Seraphim (C& S), respectively were selected for the study. In the process, interviews were conducted with ten (10) mountain officials and users. The study reveals that there are both beneficial and detrimental dimensions to the practice. It benefits the people, spiritually, sociologically, and economically. Detrimentially, commercialization of the gospel and misinterpretation of scripture were observed to be perpetrated by some (not all) of the officials. It is therefore recommended that managers of these mountains should do their best to curtail if not completely eradicate the case of self-acclaimed prophets who roam about these mountains with the ulterior motives of swindling the unsuspected.*

**Key Words:** Critical Investigation, Prayer Mountains, “Aladura” Christians and Southwest Nigeria

**Word Count:** 285 words

**Introduction**

One of the distinctive features of Aladura Christianity is the preference for the use of sacred places, prominent among which are the Prayer Mountains, popularly referred to as Ori-Oke. The “Aladura” Churches are those indigenous Churches, which

began to emerge in Nigeria, specifically within Yorubaland from the second decade of the 20<sup>th</sup> century. The churches designated by scholars as belonging to this group are four in number: the Christ Apostolic Church (CAC), the Cherubim and Seraphim Movement (C & S); the Church of the Lord (Prayer

Fellowship) Worldwide; and the Celestial Church of Christ (CCC). The name *Aladura*, means “owners of prayer”, praying people or one addicted to prayer. This nomenclature was given to them because of their practice of fervent and long praying sessions, or for their addiction to prayer. Ayegboyin and Ishola observe that prayer not only forms the bedrock of their practices and doctrine but they also believe that prayer is the fountain head of all their blessings and successes. The name also confers on them an identity that they are for no other business than to pray and this seems to suggest that all other functions are secondary (Ayegboyin&Ishola 1999:27-28).

Imbedded in their addiction to prayer is the belief that prayers, when offered in some sacred places are more likely to be efficacious than prayers offered in other places. They believed that where one prays determines largely the efficacy or otherwise of the prayer and/or how soon it would be answered. Consequently, certain sacred places are set aside for prayer. Such places include the many *Aladura* prayer mountains, which litters the nooks and crannies of Southwest Nigeria. Members of these churches could be seen on these mountains engaging in vigorous and agonizing prayer, with the belief that such prayer will never go unanswered. However, over the years, this practice has generated much controversy among Christians of other denominations. While the *Aladura* feels at home with it, some Christians of other denominations demonstrate ambivalence for this practice. These are of the view that it is nothing but an

exercise in futility. They argued that God is everywhere and will always answer prayers that are compatible with His will, irrespective of where it is offered. Paradoxically, while some leaders of other denomination are still viewing the practice with disdain, it is observed that the practice is becoming attractive to some of their members. Some of these who according to them crave for a more radical, aggressive and dynamic prayer experiences, other than what is available in their denominations have developed interest and indeed started visiting Prayer Mountains.

In addition, there are those who criticise certain practices observable on the mountains as “Christianly” unhealthy. They further argued that some of the practices tended more towards those within the African Indigenous Religion. Others complained about the physical environment of these mountains as not conducive to sound health. The opinion of this research paper is that this controversy stemmed from a lack of an objective investigation of the subject matter. It is in this regard that this investigation was conducted so as to unravel the “pros and cons” with the aim of assessing how far it is achieving its objectives among those involved in the practice. It also aimed at identifying the implications for *Aladura* Christians in particular and Christianity in general. The study adopted the descriptive-analytical approach. Oral interview and phenomenal observation of activities at the Prayer Mountains were used as tools for obtaining data. Oral interviews were conducted with ten (10) respondents, comprising

mountain officials and users.

### **Prayer Mountains in Southwest, Nigeria**

Prayer Mountains abound in Southwest, Nigeria. Among these are *Ori-Oke* Erinmo located at Erinmo near Ilesha, *Ori-Oke* Agelu near Iseyin, *Ori-Oke* Iragbiji near Osogbo, *Ori-Oke* Iragberi near Ejigbo, *Ori-Oke* Baba Abiye, at Ede and *Ori-Oke* Horeb, Ile Igbon, Oyo State. However, this investigation is restricted to two of them – Ikoyi Mountain of the Christ Apostolic Church (CAC) in Ikoyi, Osun State and Olorunkole Prayer Mountain of the Cherubim and Seraphim (C & S) in Ibadan. The choice of these two mountains was informed by the fact that among the four churches designated as *Aladura* churches in southwest Nigeria, only the CAC and the C&S operates Prayer Mountains and the two chosen are their principal mountains.

### **Ikoyi Prayer Mountain**

The popular Ikoyi Prayer Mountain is one of the pride of Christ Apostolic Church (CAC) and the Ikoyi people of Isokan Local Government Area in Osun State of Nigeria. The Mountain, which is being referred to by some as Babalola Mountain, is situated at Ere Omo Village, near Ikoyi in Osun state. Prior to this mountain being turned to a prayer site by the CAC, traditional worshippers designated it an evil forest (*Igbo Aiwo*) because sacrifices and rituals to divinities and other nefarious traditional religious practices take place on the site. However, in 1936 the Mountain received a new nomenclature

when Joseph Ayodele Babalola, the foremost evangelist of the Christ Apostolic Church and his deputy D.O Babajide who were on an Evangelical Mission to Ikoyi claimed to have had a revelation of an Angelic being lifting up a bright light at the top of a mountain within the locality, and Babalola insisted that they must locate the mountain, believing that it was God that revealed it to him for a purpose (Ekundayon.d. 3).

With the help of one Pa. Ogunsola, they succeeded in reaching Ero-Omo village, where the mountain was situated. Before others could locate an access root to the top, Babalola had started climbing the mountain, and others were then compelled to join him. He later shared the testimony of how he had seen angels chasing the malevolent spirits away from the top and surrounding of the mountain. In addition, the wild animals who were residing on the mountain were reported to have cleared the way for Babalola. When he got to the top, he claimed that an angel affirmed the approval of the mountain as one where God has placed His name and where signs and wonders would be done through the ministry of Babalola. He reiterated that although God would still use him (Babalola) to start other Prayer Mountains, none would be greater than that of Ikoyi, as God made a covenant with him with regards to the miraculous work that would be done at this mountain.

In relations to Babalola's testimony, the Akinyode Descendant of Ejemu Compound ably represented by Pa Odewole, Quarri and Orisatolu willingly handed over the mountain to



the Church authorities for consecration and use for prayer activities, and had since remained so. Ikoyi Prayer Mountain was primarily for male until of recent when the female section was carved out, although the females are not allowed to lead themselves. The reason for the female section was to cater for the yearning for solitary prayer and spirituality among the female folks of the church.

### **Olorunkole Prayer Mountain**

Olorunkole Prayer Mountain is situated at Akinyele village, a suburb of Ibadan in Oyo state of Nigeria. The mountain is said to have been consecrated in 1913 by the spiritual head and founder of the Cherubim and Seraphim Movement Worldwide, the Prophet Moses Orimolade Tunolase. The history of the establishment was linked to an announcement made by one Egunjobi Ode, a hunter who came to the town to announce the vision of an angel; he claimed to have seen on the mountain. The angel was reported to have informed him of God's anger, prophesied the coming war, and commanded him to go preach the message he received. Afterwards, the angel disappeared, leaving a footmark on the rock (Peel 1968:58-59), which is still said to be visible there today.

The Prophet Orimolade came to the mountain and saw the vision of the same Angel who told him of God's intention to bless whoever would believe in Him and pray on the mountain. The angel was said to have promised deliverance and healing that would enhance the faith of whosoever

that seeks God faithfully at the mountain. Consequently, Orimolade enjoined his entire followers to hearken to this heavenly vision and thereby consecrated the mountain as a place of prayer for all seekers and believers. The name “*Olorunkole*” came out of one of the vision where the angel was seen to have entered into a cave at the mountain consequently people started calling the place “*Olorunkole fun ara re.*” meaning that God had built a home for himself. Olorunkole however became the place of spiritual retreat and the principal mountain of Cherubim and Seraphim Movement till date and had attracted visitors from all parts of the country and even there have being reports of some foreigners' who had been there for spiritual assistance and help. Omoyajowo (1982:161) explains that, till today, “the hill is still very significant to all C&S members as a place for retreat and ordination of officers.”

Pastor Taiwo Oke of Christ Word of Salvation Evangelical Church in Ibadan, an interview respondent reveals that the place where one prays, determines largely the efficacy of such a prayer. He reiterated that time to time the Lord had instructed him to get to *Olorunkole* Prayer Mountain to pray and has not been disappointed for obeying the voice of the Lord. Pastor Olaoluwa Oladimeji in his view about *Olorunkole* Mountain states that many people living at *Akinyele* village would come for early Morning Prayer at the mountain instead of praying at their respective home because of the belief in the efficacy of prayer offered on this mountain.

### **Activities at the Prayer Mountains**

One major activity at the mountains is prayer. Majority of those who visits the mountains are there principally for prayer, however, other support services have over the years been introduced to the environment as a means of catering for the visitors. While some are there to pray on their own, there are others who came to be prayed for. However, since major business at this place is prayer, there are stipulated hours of prayer day and night. The two sessions of prayer have five hours each between 11 and 4 every day and night. At this time, no other business is allowed, every person is enjoined to participate, and offering of personal prayer is prohibited at this time of corporate prayer. The allotted time for personal and individual or group prayer is when the corporate prayer was not in session. While some are there to pray on their own, there are others who came to be prayed for, invariably, there are periods set aside for consultations with the leaders. This always enables those who felt the need to be prayed for to consult the elders for same. Though prayer means different things to different people, however, the consensus is that it is a divine exercise, mostly a request from a finite being to the infinite and virtually all Christian authors who had written on prayer consider it a request for divine intervention in human affairs; a means of achieving the impossible and a task that must be done (Ogunewu 2017: 262).

Prayer is an indispensable practice of the Christian Faith and that of other religious persuasions and so

one would not be surprised of the prominent place accorded it in virtually all Christian programmes, especially on the mountains. As earlier explained, the *Aladura* churches that run these mountains were given this appellation because of their emphasis on prayer. Sunday Komolafe (2013:127), corroborating this view states that *Aladura* churches are so-named because of the extensive practice of *adura*(prayer). Speaking further he explains that the belief in the efficacy of prayer for every eventuality is the keynote of all their doctrines and one single factor which characterize the whole movement. To them, prayer is the medium whereby the supernatural power of God most decisively meets human needs to subdue evil, gain specific guidance or infuse divine vitality into human life. According to Michael Ogunewu, it is on record that their prayer achieved much for them in the early days of their existence, hence the establishment of these mountains, to encourage and assist people to pray. Today, just as in days gone by, they are still of the firm conviction that the myriad of challenges confronting us as individuals and corporately as a nation can only be subdued through prayer (2015:59).

Interwoven with prayer on the mountains is fasting. Fasting is abstaining from food or drink, which cannot be divorced from prayer. Both are spiritual exercises which combined could achieve much for the Christian, both spiritually and materially. Christian writers attest to the efficacy of both exercises, when taken together (Prince 1973:77-88). Closely related to

the two is the issue of faith, which is a continuous emphasis on the mountains. Leaders often stressed that fasting and faith are to complement praying. Jesus taught that some tasks could not be accomplished except through prayer and fasting (Matthew 17:19-21). Scriptural fasting is a beneficial spiritual exercise that can accomplish great things when used in combination with prayer and faith. Therefore, it is not out of place for Christians to fast and pray either individually, or corporately as a church, it accomplishes a number of things in the life of the believer. Consequently, this is one major pre-occupation on the Prayer Mountains. However, visitors are often cautioned never to engage in extremely long fasting that can endanger their health, as this could hamper their usefulness. They are to fast only when it is necessary and for as long as the physical strength can cope with.

The stance of the mountain spiritual leaders on sinfulness is to be highly appreciated. For instance, at the foot of the Ikoyi Mountain is a wall that contains information on the type of lifestyles expected at the Mountain site and all the dos and don'ts of the environment. The first warning is that sin is frowned at and considered a major hindrance to prayer. Visitors are enjoined to confess their sins and ask for forgiveness before climbing the Mountain. In addition, it is reiterated that prayer should be rendered in faith as nothing can be received through prayer without faith in God. In many instances, prayers are always backed with vows never to return to sin. People are also warned to be careful and

vigilant with regards to some fraudsters that could come their way at the Mountain. This was necessary to sensitize the people as a result of previous experiences of “wolves in sheep clothing” who had defrauded people in the pretext of being prophets, while in fact they are fraudsters.

### **Experiences at the Prayer Mountains**

Experiences at the Prayer Mountains are combinations of the beautiful and the ugly. Just as many had series of beneficial experiences, spiritually and materially, so also there are a few bitter experiences.

### **Beneficial Factors**

The place of Prayer Mountains in *Aladura* expression of spirituality cannot be over-emphasized. The mountains are regarded by devotees who converge there as a privileged space of power where people commune with God, free from domestic or other forms of disturbances. Naturally, the belief is that the serene environment guarantees the divine presence and ensures speedy answers to prayer. Visitors to the mountains cut across denominational divides and class, as the place play hosts to both the leader and the led within the Christian circle. First, one major aspect of Christian leadership in Nigeria is the quest for spiritual power, which as believed by many, can only be acquired through prayer. Consequently, these mountains have for decades served as retreat centres for Christian leaders, who sought for spiritual power for effectiveness in ministry. These resort to the mountains to have time alone with

God with the aim of boosting their spirituality, so as to remain relevant in the ministry. Aylward Shorter (1978:4) explains that spirituality is “the core of the Christian experience, the encounter with God in real life action”. It is an experience usually derived from an intimate relationship with God, which many believe enhances efficacy of prayer and boost spiritual power.

There are reports of ministers of God, who had benefited from the use of prayer mountains as retreat centres and who today have become prominent in ministry. These include Samuel KayodeAbiara, a retired General Evangelist of Christ Apostolic Church. He was said to have spent several months at Olorunkole Prayer Mountain before the Lord bestowed His power on him. Others include Prophet MuideenKasali, Prophet Hezekiah Oladeji who founded a branch of the Christ Apostolic Church and a prayer mountain at Olode Garage in Osun State, Nigeria and today a General Evangelist of the Church. In the same vein, individual Christians, who seek after spiritual power sees these mountains as places where they could seek God in solitary prayers, for the betterment of their lives, spiritually and materially and many of these testified to the fact that they are getting result from their prayer.

Second are solutions to life challenges. Africa is a continent where the masses groan under various forms of life challenges, with both physical and spiritual connotations. Physically, the environment is riddled with various forms of privations which are making lives difficult for the people and

members of the political class whose responsibility it is to alleviate these sufferings are continually disappointing them. Spiritually, there are the activities of malevolent spirits and those of people of diabolical powers, whose stock-in-trade is to torment and cause harm. These challenges have turned the attention of the people to God for divine intervention, and Prayer Mountains are part of the places where people troop to for this through prayer. It is to alleviate these sufferings are continually disappointing them. Spiritually, there are the activities of malevolent spirits and those of people of diabolical powers, whose stock-in-trade is to torment and cause harm. These challenges have turned the attention of the people to God for divine intervention, and Prayer Mountains are part of the places where people troop to for this through prayer.

Talking of divine intervention takes us to the topic of miracles, which is a controversial issue, in many cultures of the world. While some believes in its reality (Martin 1988: 7-80), there are those who generally, dismiss claims to miracles as false, and contend that miracles are impossible (Omorgbe 1999:116). This notwithstanding, the belief in miracles is universal among Christians (Bello 2004:42-45), but the emphasis is stronger among the Pentecostals and the *Aladura* churches, that run these Prayer Mountains. Leaders of these denominations have always insisted that the days of miracles are still very much with us. They emphasize the ability and willingness on God's part to intervene miraculously in human

affairs. To them since doing the impossible is God's specialty, it is very simple to receive miracles from Him (Kumuyi 1991:63). Often they testify to miraculous activities, which they claimed have attended their ministrations (Kumuyi 1982:15-16). This search for miracles is a singular factor which attracts people to the Prayer Mountains more than any other. People troop to these mountains with the belief that when they pray personally or are prayed for by ministers, their desired miracles will come, and some of our respondents testified to having received one miracle or the other as a result of ministrations on these mountains.

In addition, the mountain experience enhances self-discipline. Every individual that attended either of the Prayer Mountains would have to be disciplined as to the time to leave home, the painstaking efforts of climbing the mountains; the abstinence from food and conveniences of daily living; and coping with the various activities on the mountains, which are often very tedious. It also served as a means of fellowship with other believers one may not think of meeting in life. In the course of interacting with people who claimed to have received answers to their prayers, others are encouraged to attend Christian gathering after leaving the mountains. Many who erstwhile do not have time for Church programmes but who in one way or the other find their ways to the Prayer Mountains and consequently enjoy Christian fellowship, have eventually turned out to be committed Christians. Many business icons and prominent figures in

the society attend the vigils at these mountains although they do not identify with Christianity in public; hence, they are like Nicodemus that often visit Jesus at Night.

Interactions on the mountains also have certain socio-cultural implications. The Prayer Mountain is an African Christian Initiative and speaks volumes on African expression of Christianity and their quest for spirituality. It is a means of isolating self from the busy and tight schedule in order to seek God's face. The system at the mountains is purely indigenized, although to meet the needs of non-native speakers, the leadership device a means of interpreting their programmes into English language. Typical of the *Aladura* churches, the two mountains studied had contextualized Christianity to encourage active participation of members in worship. The usage of drums, singing of African songs, clapping and dancing in African ways, dressing and communal life style are evident of the African way of life. This made the people feel at home as they enjoy a form of Christianity which is entirely African and entirely Christian, irrespective of the shortcomings.

The administrative procedure on the mountains is simple. While members of some churches have challenges accessing their leaders, the leaders of the Prayer Mountains are always at the disposal of the people. They are available to them all through their sojourn on the mountain. They listen to, empathize with them and help find lasting solutions to their challenges through the prophetic ministry. This tends to give the people a



sense of belonging; ensure continued patronage, and always made the mountain environment a beehive of activities from time to time. Innovatively, the Pentecostal Churches have tried to provide alternatives to Prayer Mountains through the various campgrounds, especially along the Lagos-Ibadan expressway, yet the Prayer Mountains have remained the preferred options of the people. One reason for this is that while many of the camps charge fees and leaders there are often not available for counsel and consultations with users, the Prayer Mountains are free and leaders are there always in consultation with the people.

The networking potentials among mountain users are enormous and have great prospects for the unity of the church, if harnessed by the leaders across denominations. The Prayer Mountains are pervaded with atmosphere of friendliness. There, denomination and ethnic biases are discarded as people of diverse denominations and ethnic groups interact together freely, their main interest being to pray. Together as a unified congregation, they pray for the common good of the individuals, that of the nation and Christianity as a body. It would not be an exaggeration to state that if the type of unity and cooperation which exist on the mountains could be sustained, it could promote friendliness among Christian across the various denominations. Consequently, the spirit of antagonism which occasionally rear its ugly head and cause confusion among Christians will be drastically curtailed, if not totally eradicated.

An extension of this is that after

leaving the mountain, many still contact each other either for business; invitation for ministration at their respective Churches and for employment purposes. Those who have been to the mountain to pray at a time or the other still introduce and recommend the same to other person met or friends thereby serving as medium of publicity for the place and other ministers met at the mountain of prayer. Many became friends all their lives because of the time spent at the mountain together. In addition, it is not impossible that many have met their life partners on some of these mountains, where both sexes are permitted to interact and fellowship together.

Among the benefits of these mountains is the fact that they have created sources of livelihood for many. The activities of motorcycles riders, food vendors, drivers and sellers of other domestic items are visible at both mountains. Specifically at the Ikoyi Mountain, there is a car wash centre, where visitors do wash their cars and a guesthouse with a big restaurant attached has been built around the place for the use of people who are there to pray. The guesthouse has given those who want to stay on the mountain for more than the officially allotted days to be able to do so. However, it is worthy of note, that the leadership of the Prayer Mountains did not build this guesthouse; neither are they involved in any of the commercial activities taking place there, rather those came through private initiatives of business people around the mountains, who utilized the opportunity of people coming to pray, to provide these conveniences. These

have contributed immensely to the economic development of the community, and sustained several homes that cannot get employment opportunities from the government and other sectors.

In addition, several people who do not have hope of livelihood before they ran to those mountains for prayer testified of what God has done for them through praying to Him on the mountain. One of such people who shared his experience with the researcher explained that he was introduced to the Prayer Mountain by a friend, as a result of the high level privation which attended his life due to joblessness. However, according to him, he now has a beautiful story to tell as God has answered his prayers and blessed him with a lucrative source of livelihood.

Finally, the activities on the mountains have certain misiological propensities. The word “missiology” is derived from the word “Mission”. Mission means the task of proclaiming the gospel of Jesus Christ across ethnic or geographical boundaries. It is also the science of doing missions (Anderson 1998:1). Parts of the aspects or constituent of mission are the issues of evangelism, church growth, and discipleship. It is obvious that the Prayer Mountains enhances mission in one way or the other. The groups evangelize; they make invitation after the gospel message is preached, thus giving opportunity for people to accept Jesus Christ as their personal saviour and Lord. Also, the groups are dynamic in doing missions, in modern ways, as they apply modern publicity tools such

as evangelistic vans, television, radio and other forms of technologies for publicity and proclamation of the gospel message. Testimonies of divine healing and other miraculous/ supernatural manifestations at the Prayer Mountains often lead to increase in zealousness for evangelism and Church planting. Many Pentecostal pastors seek God's face and direction at the Prayer Mountains before they embark on their revival services and church planting efforts. According to one of our respondents, he has been ordained as a pastor, but his coming to the mountain for prayer really enabled him to be endued with power from above through the Holy Spirit. This has enabled him to move forward in his ministry and record a high degree of success.

### **Detrimental Dimension**

As beneficial as some of the activities on the mountains are, there have been instances of gross excesses on the part of some of the prophets, teachers and other users of the mountains. First in this regard is the atmosphere of commercialisation being perpetrated by some prophets. This comes in two ways. One is through incessant giving which observably is being accorded official recognition in certain cases. In this regard, people are subjected to giving that seems to be endless. While it is not out of place for people to give at fellowship meetings, it would be advisable for leaders to be reasonable with their demands. They should bear in mind that majority of those who patronize them are the less-privileged in society, and needed to be

spared the psychological trauma which usually attended inability to give at any point in time. The other side of it is the activities of some self-acclaimed prophets who commercialize the prophetic ministry and use it to defraud the people. Such go about the mountain areas either begging in the name of God, or prophesying for money and using false prophecy to defraud some gullible visitors to the mountain.

Another issue of concern is that sometimes, biblical portions or doctrines are interpreted in ways observed to be inimical to sound biblical teaching and practices. This is partly because of the low level of theological training of some of the leaders, who unfortunately are given unrestricted freedom to teach doctrines and interpret scriptures, which, they do according to their personal experience and worldview, rather than do an in-depth study of the Bible. This is capable of misleading the people, because except for a few mature Christians who come to the mountain for spiritual retreat, others who are only concerned about solutions to their problems often fall victims to these false teachings. Although instances of these are not common at Ikoyi Prayer Mountain because of the level of discipline and theological training of the leaders, it is rampant at Olorunkole.

Furthermore, is the practice of spending days, weeks and months at the Prayer Mountains, and which encourages laziness and lack of responsibility. The long stay of some people is indeed questionable. Many people that should be responsible to their individual families are perpetually

seen on the mountains idling away their time in the pretext of praying, instead of looking for job to do. Coupled with this is the unruly behaviour of some of the mountain boys otherwise referred to as "Sons of the Prophets" and the questionable character of some of the leaders. All these should be looked into by the leaders so as to guide against the possibility of some people of questionable character using the mountains as a hiding place after the perpetration of heinous crimes in the wider society. Also to be discouraged is the habit of over-dependence on leaders by some visitors. Some people rather than put their faith in God, always have their focus on the leaders. This is not good enough. While the position of leadership in any fellowship cannot be relegated to the background, it behoves the leaders to assist the people develop a firm foundation by having their faith rooted in God, rather than position themselves as the God of the people, a situation observed in the *modus-operandi* of some of the leaders

### **Conclusion**

This paper underscores the predilection for the use of Prayer Mountains among *Aladura* Christians of Southwest, Nigeria. This practice has become one which cannot be wished away in the expression of Christian spirituality within the zone. Today Prayer Mountains litters the major towns and cities of southwest, Nigeria. Interestingly, this practice which erstwhile was predominant among the *Aladura* had over the years become attractive to Christians of other

denominations. The paper therefore is an investigation of activities on these mountains. Two of the mountains were purposively selected, one for the Christ Apostolic Church and the other for the Cherubim and Seraphim, because the use of Prayer Mountains is more prevalent among these two *Aladura* groups.

The paper identified both the beneficial and detrimental dimensions of the activities on the mountains. In the light of these, it makes the following recommendations. One, while one is not discouraging the practice of visiting Prayer Mountains for prayers, it is advisable for the Yoruba Christian community to intensify effort at knowing God more deeply. God is not a God of the mountain alone, but His presence is everywhere and His power can be manifested anywhere once people worship Him in spirit and in truth, with holiness of heart (John 4:23-24). Second, considering the misnomer of unwholesome teachings and practices by some leaders on these mountains, there is the need specifically for the Cherubim and Seraphim Church to intensify theological training among her ministers. It is believed that having right and sound theological training would enhance delivery of the gospel messages and help to ameliorate some observed deficiencies that often emanated from shallow and myopic view of the biblical passages and quotations. It would also help the church to be rightly informed concerning the right application of contextualization and Africanization of the gospel. Bible is above every culture and hence should not be subjected to

culture but rather place over and above all human cultures.

It is also recommended that leaders on the mountains should make efforts to develop their followers into sound and credible Christians through viable discipleship programmes, so as to make them functional members of the church, rather than mere seekers after solution on a continuous basis. Also, pastors of mainline churches who deride visits to the mountains should realize that this practice has come to stay at the heart of the practice of Christianity in the Yoruba environment. Rather than keep deriding the practice therefore, it is advisable for them to probe into the reasons why some of their members visit Prayer Mountains and consequently provide alternative means of helping to solve their problems. This is because many churches and pastors do not care to meet the emotional, psychological and spiritual needs of their members in terms of providing adequate spiritual atmosphere for the parishioners, yet they keep complaining and castigating members for seeking solutions elsewhere. Finally, all visitors to the Prayer Mountains should be advised on the need to develop themselves spiritually, rather than relying perpetually on leaders of the church. This will enable them to distinguish between wrong and right messages and counsels and be conversant with the Bible. The only true and right revelation that does not change has been given to man and that is the Bible.

## References

**Anderson, Justice.**

*Missiology: An introduction to the Foundation, History and Strategies of World Mission*, Nashville: Broadman& Holman, 1998

**Ayegboyin, Deji and S. AdemolaIshola,**

*African Indigenous Churches*, Lagos: Greater Height Publications, 1999.

**Bello, D. K., “God the Son” in J. O. Akano (ed)**

*The Trinity and the Church*, Ibadan: End-Time Publishing House Ltd., 2004.

**Ekundayo, Clement.**

“Brief History of Ikoyi Prayer Mountain where God Answers Prayer”, *Golden Pen Magazine*, Vol 002.nd. 3**Komolafe, Sunday.**

*The Transformation of African Christianity: Development and Change in the Nigerian Church*, Carlisle: Langham Partnership, 2013.

**Kumuyi, William F.,**

*Hope for Our Generation*, Yaba: Zoe Publishing and Printing Company Ltd., 1991.

**Kumuyi, William F.,**

*The Secret Place*, Yaba: Zoe Publishing and Printing Company Ltd., 1982.

**Martins, J. R.,**

*We Still Believe in Miracles!* Virginia Beach: Word of Life Publication, 1988.

**Ogunewu, Michael A.,**

“The “Perfection Emphasis” of Sacrifices in the Old Testament as value for Quality Christian Worship” *Practical Theology Journal*, No. 10, 2017, 251-273.

**Ogunewu, Michael A.,**

*Travails and Triumphs of Aladura Christianity in Nigeria 1920-2010*, Ikeja: The Amen Mission Inc., 2015

**Omoregbe, J., A**

*Philosophical Look at Religion*, Ikeja: Joja Educational Research and Publishers Ltd., 1999.

**Omoyajowo, Akinyele J.,**

*Cherubim and Seraphim: The History of an African Independent Church*, Lagos: NOK Publishers, 1982.

**Peel, J. D. Y.,**

*Aladura: A Religious Movement Among the Yoruba*, London: Oxford University Press, 1968

**Prince, Derek.**

*Shaping History through Prayer and Fasting*, Fort Lauderdale; Derek Prince Ministries-International, 1973.

**Shorter, Aylward.**

*African Christian Spirituality*, Maryknoll, New York: Orbis Books, 1978.



**Interview Respondents (January-February 2019)**

S/No	Names of Respondents	Location	Occupation	Date
1	Abidoye, Wisdom	Ikovi	Clergy	15-02-2019
2	Adewumi, John	Ikovi	Trader	15-02-2019
3	Adeyanju, Solomon	Ikovi	Clergy	15-02-2019
4	BabawaleOlumuyiwa,	Olorunkole	Police Officer	07-01-2019
5	MakanjuolaAbosedo	Olorunkole	Civil Servant	10-01-2019
6	Oke, Taiwo	Olorunkole	Prophet	10-01-2019
7	Oladimeji, OlaOluwa	Olorunkole	Clergy	10-01-2019
8	Olagbeniro, Moses	Olorunkole	Mountain Official	07-01-2019
9	Orisatolu, Olusegun	Ikovi	Trader	16-02-2019
10	Ovemakinde Peter	Ikovi	Teacher	16-02-2019

# HISTORICIZING THE RESILIENCE OF TRADITIONAL RELIGIOUS PRACTICES IN IKORODU

Omotayo K. Charles

Department of History and International Studies  
McPherson University, Seriki Sotayo, Ogun State

## Abstract

*Most literature on Yoruba traditional religion and religious practices were carried out by colonial administrators, missionaries, travellers and explorers who were concerned with writing about the so called "pagan" practices and "animist" beliefs of the African peoples. Their focus was basically to denigrate the people and their traditional practices. Christian missionaries, in particular, were interested in understanding the local beliefs in order to communicate better their own religion to their would-be converts. Yoruba traditional religious belief systems, then, are almost always in the shadow of one of the two foreign religions that are practiced in Yoruba land. A further complication, as Olupona (1993) posits is that scholars rarely study Yoruba traditional practices in historical perspective, but rather use an anthropological or synchronic approach. The result is that they are often seen as timeless and unchanging. This study intends to interrogate traditional religious practices in historical perspective looking through the resilience of traditional religious practices in Ikorodu during the colonial administration. It argues that in spite of social change resulting in the introduction and spread of Islam and Christianity in Ikorodu, as well as its proximity with metropolitan Lagos and the influences of modernization, a good number of traditional practices have been resilient since the colonial period. It concludes that the resiliency of traditional religious practices in Ikorodu community is Ikorodu's unapologetic traditional practice and pursuit of religious pluralism in the last century.*

**Keywords:** Ikorodu, Resilience, Traditional, Religious Practice.

## Introduction

“Tradition” is a commonly used word—and, like many common words, elusive. Precisely because it is usually taken for granted as basic and so—in a sense—“obvious,” it has often for that reason not been discussed. Finnegan, (1991). Tradition, is very much and always with us. It is with us at every moment of life – in our innermost beings and with regard to the great or minor events of life; it is discussed daily in the newspapers, through the radio and television, and in our conversations. It is with all of us inevitably; whatever may be our individual, avowed attitudes to it. It is a subject that has generated controversy among scholars and it is a subject that will continue to generate controversy

among everybody because everybody is interested in it. Be he a believer to whom his tradition is a matter of ultimate concern, or a person who thinks that he does not believe and cannot believe in tradition. Idowu(1991) Invariably there is no scholarly consensus over what precisely constitutes a tradition.

In ordinary discourse, the term *tradition* is understood to refer to a set of beliefs and practices that share (or are believed to share) some relationship to the past. The beliefs are either about the nature of life in the past or about the origins of current practices in the past (“since time immemorial” Olupon (1993).

Traditional practices are those that are believed to have originated in the past

and are seen as a thread of continuity between past and present. They may include celebrations, rituals, folktales, costume, and other elements of expressive culture, as well as rules of conduct, items of material culture, and techniques. According to *Turner* (1997), tradition had been a fairly neglected topic in the social sciences for decades until the 1980s. In that decade it became the focus of a number of studies by historians, anthropologists, and sociologists. "The Assumption of Tradition," by *Homer*, (1990) is perhaps the best thing ever written on the subject of tradition. *Homer* reminds us that tradition refers both to *the process* of handing down from generation to generation, and *something*, custom, or thought process that is passed on over time. Thus we can say, for instance, that a multi-generational dance is an item of custom, a performance, and at the same time, such a dance is an occasion for the passing of the technique and the feeling of the performance from older to younger generations. Until recently, this handing on was a natural, unself-conscious part of the dance. Until the continuity was threatened, until the possibility of the inability to hand things down arose, people were not so self-conscious of the process of the handing on of tradition, hence the fight back against the forces threatening tradition.

The forces threatening the continuity of traditional religious practices are multi-dimensional and this includes secularism and modernity. *Peter Berger* (1968) had predicted that "(by) the twenty-first century, religious believers and adherents of tradition are

likely to be found only in small sects, huddled together to resist a worldwide secular culture." However, contrary to this prediction and others that modern society will eventually become completely secularized, it appears that human beings are engaged in a wide range of traditional practices – socio, economic and spiritual experiences, disciplines, beliefs, practices, etc. that were virtually unimaginable five decades ago. In Nigeria, Ikorodu community in Lagos State is experiencing this trend on a scale that has not been interrogated by scholars. In the last six decades, traditional movements and groups have continued to re-emerge changing the faces and phases of traditional religious practices – in a century where secularization is taking over mankind. This study is an attempt, to comprehensively interrogate this trend in Ikorodu. By traditional religious practices here, we mean those practices that are originally African, originally Yoruba.

### **Conceptual Framework**

In a study of this nature, one cannot but interrogate some major concepts that feature prominently in it. Major concepts in this paper include Historicizing, resilience, traditional and religious practice.

### **Historicizing**

Historicising is from the term "Historicisation" and it is the most basic term in that cluster of terms concerning history. All these terms are derivatives of history, of course, but historicisation is the core term insofar as it designates the basic activity and phenomenon from

which historicism, historicity, and historicity follow. According to Beiser (2016) Historicisation is the attempt to historicize all our thinking about the human and natural world, where “to historicise” means to put in proper historical perspectives and periods. In the context of this paper, to historicise means putting the resilience of traditional religious practices in historical perspective. The motive is to show that traditional religious practices in Ikorodu has been resilient against the combined onslaught of Christianity, Islam and modernisation.

### **Resilience**

Early work on resilience was concerned with the individual, but more recently researchers have become interested in resilience as a feature of whole communities. Fleming and Ledogar (2008). The most common definition of resilience in the past few years is: positive adaptation despite adversity. Luthar (2006). The ability to recover quickly from illness, change, or misfortune, is the general meaning of the "resilience". Gholam(2013). As it is with a human, who passes through adversity and threat, so also it is with institutions, beliefs, practices and norms. For example, Natalie A. Washington-Weik, (2009) studied The Resiliency of Yoruba Traditional Healing: 1922-1955. Her study focuses on the colonial era when the indigenous and western medical healing systems increasingly interfaced and the Yoruba healing system was resilient despite the condemnation and threat from the western medical practice the period produced important social and civic

factors that stimulated the widespread retention of the Yoruba healing system and a prevailing popular positive view of it locally. What this presupposes is that resilience as defined earlier does not capture humans alone but also concern systems, practices and beliefs. Thus, the resilience of traditional religious practices in Ikorodu could be said to be the process through which traditional religious institutions adapted well in the face of adversity and threats from the combined forces of colonialism, Christianity, Islam, modernity and secularity.

### **Traditional**

Often, there is a certain degree of semantic and conceptual misapprehension surrounding the word “traditional”. The general notion or implication, also arising from this confusion and misapprehension, is that of outdated or perhaps primitive practices. This same view often envisages anything traditional as being mutually antagonistic to what is generally known as modern Omotayo (2017). According to the Cambridge Advanced Learner's Dictionary, Tradition means a belief, principle or way of acting which people in a particular society or group have continued to follow for a long time, or all of these beliefs, etc. in a particular society or group. Merriam-Webster Dictionary describes 'Tradition' as 'inherited, established, or customary pattern of thought, action or behavior (as a religious practice or a social custom)'.

### **Religious Practices**

Emile Durkheim in, *The Elementary Forms of the Religious Life* (1915) conceptualized religion as a dichotomy on the basis of social facts by studying of the indigenous Aborigines of Australia and arrives saying that “religious phenomena are naturally arranged in two fundamental categories of beliefs and practices”, the first being the „states of opinion? in the representation of the mind; the second „determined modes of action? which is the practical side of life” (1915: 36). Accordingly he states that “religious representations are collective representations which express collective realities” (ibid: 10). Therefore, he claims that, all known religious belief systems, whether simple or complex, present one common characteristic that presupposes a classification of all the things as real and ideal?, into two classes or opposed groups designated by two distinct terms or words — „profane? and „sacred? (ibid: 37). Thus, Durkheim gives one of the most convincing definitions of religion as: “*A unified system of beliefs and practices relative to sacred things, that is to say, things set apart and forbidden, beliefs and practices which unite into one single moral community called a church, all those who adhere to them*” (1915: 47). With that, this study can rightly define religious practices as a unified system of beliefs and practices relative to sacred things set apart and forbidden.

### **Geography and History of Ikorodu**

Situated at a distance of

approximately 36 km north of Lagos, Ikorodu is bounded on the South by the Lagoon. In the north, Ikorodu shares common boundary with Ogun State. While in the East, it has common boundary with Agbowa-Ikosi, a town in Epe Division of Lagos State. **According to Boge, Ikorodu** was originally founded as an Egure by Oga for the purpose of economic expansionism. The word Egure has been interpreted to mean different thing in different Yoruba communities. For example, according to Oduwobi,(2004) Egure is derived from the word Ure, meaning bush. He added that Egure means Countryside. Abraham (1958) simply refers to Egure as meaning Town or Village. Olukoya Ogen (2009) refers to Egunre in Ikale dialect to mean Farm Estate. In the mid-nineteenth century, Ikorodu became important as a trading post of the Remo kingdom on the trade route from Lagos to Ibadan. As a gateway to many communities in the hinterland, Ikorodu was affected by the concurrent episodes in the nineteenth century Africa. These episodes included the repression of Trans - Atlantic slave trade, the growth and development of export trade in forest products, the protracted internecine wars and religious movements, and the increasing European economic and political activities which laid the foundation for colonial rule. The interplay between these historical events and the strategic location of the town provided the template upon which the future socio-economic continuity and change of the town was founded.

Like many other Yoruba communities, religion permeates the



social, economic and political institutions of Ikorodu. (2009). For instance, before the coming of the British colonial administrators, the coastal town of Ikorodu played a prominent role in the traffic of goods and services between traders on its coast and many Yoruba groups who lived in the interior. While this traffic was sustained by socio – political institutions such as the Oloja and the Osugbo cult, the role of religious groups – including the Ifa priests, Magbo, Liwe and Agemo – remained highly influential because they represent the deities and spirits which shaped Ikorodu's inhabitants views about social life, economic and political institutions. Balogun (2017) this presupposes the fact that the place of traditional religion and traditional religious practices in Ikorodu in relation to the socio – economic and political life of the people cannot be over emphasised.

### **Overview of Traditional Religious Practices in Ikorodu**

According to the Olupona, there are pantheons of Orisa who line the road to heaven. All of them are thought to have been humans who, because they led notable lives, became Orisa at the time of their death. For example, ʔango, the god of thunder, was a legendary king of Oyo before he became an Orisa. The extraordinary number of Orisa in Yoruba land reflects the regional variation in their worship. ʔango is the patron deity of the kings of Oyo, and his shrines are important in those towns that were once part of the old Oyo Empire. But in Ile Ife, or in

communities to the south and east, the role of ʔango and the degree to which he is worshiped diminishes markedly. As one moves from one part of Yorubaland to another, it will be Osun, goddess of medicinal waters, or Oko, god of the farm, or Erinle, god of forest and stream, or Obatala or Agemo whose shrines and festivals shape the religious life of a people. Like in many other Yoruba communities, traditional religion was the only religion in Ikorodu before the coming of the colonial administrators, and it permeates all aspects of life of the people. Many deities in Ikorodu, such as Ogun and Egungun, are similar to deities that can be found in other Yoruba communities. However, Ikorodu, has many other deities which are more specific to other Ijebu and Remo groups, such as Magbo, Liwe, Eluku, Agemo, the Asa Agere, Odun Osu, and Oga Nla. These are religious practices peculiar to Ikorodu community.

The performance of these rituals and religious practices are for various reasons. For example, the Magbo ritual performance is believed to drive away evil forces away from the town. The festival usually commences with sacrifices offered at the Oro grove. According to Balogun (2017) during the day, Magbo priests and other devotees move around the town with songs. It is important to state that Magbo Oro does not operate without its Pako masquerade. The Pako is an Oro devotee with an effigy which symbolizes the spirit of Magbo which is usually brought from the nearby town of Ogijo. In the night, the Pako moves around the town with a roaring sound

Magbo Oro festival is closely related to Liwe Oro. This relationship could be linked to their common source of origin as both are said to have been introduced to Ikorodu by an Egba woman who married an Ikorodu man. Liwe is normally performed seventeenth days after Magbo and celebrations of both deities are held on a market day called Obun Oke. Eluku is the most famous deity of Ikorodu for outsiders. The popularity of this deity is noticed in the praise name of the people of Ikorodu who are referred to as children of Eluku (? m? Eluku m?de m?de). In Ikorodu, according to Nolte (2013), the deity is believed to have been introduced from Ile-Ife by Konyelu. The worship of this deity is restricted to male Ikorodu indigenes only. The festival associated with it follows a similar pattern as Magbo and Liwe It begins with sacrificial offerings at the Eluku grove, followed by a procession of devotees around town singing and praising Eluku. Balogun (2017)

### **Ikorodu's Resiliency of Traditional Religious Practices**

The agitation for the abolition of traditional religious practices in Ikorodu community seemed to have taken a new dimension in recent times. For example, the News Agency of Nigeria (NAN) reported that traders and residents in Ikorodu area of Lagos State have appealed to the custodians of traditional festivals to modify how they are celebrated. According to Tribune Newspaper (May 16, 2018), these traders made the appeal in interviews with the News Agency of Nigeria (NAN) in Ikorodu and called for the abolition of those that were gender biased. It is important to state, that this agitation is not new. As a matter of fact, the agitation has continued every year since the colonial administration. And in spite of these agitations, traditional religious practices have continued to be resilient and effective in Ikorodu. A good example of its effectiveness was recently reported by The Guardian Newspaper (May 9, 2018);

*Despite a belated attempt by the police to allay the fears of females to move freely, commercial activities were yesterday paralysed around Ikorodu metropolis of Lagos State as the 2018 Oro festival, which forbids the movement of women, was observed. When The Guardian visited the area, no single woman was seen on the streets, while around Ayanburen Road and its environs, banks, schools and markets were completely shut.*

*For new visitors to the usually lively Ikorodu community, one would think a major plague struck the area as popular places usually filled with people were completely deserted due to the ongoing Oro festival celebrated by traditional chiefs in Ikorodu.*

This shows that in spite of all agitation against traditional religious practices, the practices have been

resilient. The resiliency of traditional practices in general and of traditional religious practices in Ikorodu

community in particular dates back to the incursion of the British in 1862, when Ikorodu was designated as a British protectorate and it came under the authority of the Colony of Lagos following its liberation from a siege by the Abeokuta army in 1865. Philips (1970). This designation opened up Ikorodu to colonial civilization which subsequently became a threat to traditional religious practice. Of importance was the fact that, the designation opened up Ikorodu for trade with Lagosian and British traders, which had been disrupted by the siege. The British wanted a trading system patterned along European trading systems, which was based and determined by the colonial government but the people of Ikorodu resisted the attempt to downplay the role of traditional deities in trade and

operations of markets. For instance, by the mid-nineteenth century, as Suenu (2017) posits, Ikorodu had several major markets. These markets were, however, periodic markets where trade took place in intervals of nine or seven days, and as part of a network of markets that opened on different days. The most famous of the three markets were Iworo and Ajina markets in the old centre of the town. Another market was Obun Ale, which is close to Jaiyesimi compound. Another market, Oja Ebute, was on the coast of Ipakodo by the lagoon. Like Iworo and Ajina. All these markets have presently assumed the status of daily markets without abandoning their traditional periodic variables and religious essence. As a matter of fact, Suenu (2017) states further:

*These markets are illustrative of the principle that traditionally, markets are understood as governed by spiritual forces, and they are often set up in close proximity to places of ritual political importance, such as rulers' palaces, the shrines of local deities, or the meeting houses (conclaves) of secret societies. The Iworo and Ajina market, where slaves and products from upcountry were exchanged with traders before being taken to the port at Ebute Iga, is held at the old palace of the Ayangburen, the ruler of Ikorodu. Today the palace and the market places remain the central location for the town's major traditional festivals, such as the ancestral Oro association, the major groves of the town's deities, and the conclaves of the major and most important traditional cults such as the Osugbo, which advises the ruler*

The import of the above is that traditional religious practices in Ikorodu markets have been resilient against the onslaught of modernity till date.

Also, it is important to state that during the colonial administration, traditional

religious practices and groups have not only been resilient but has also been re-enacted. For example, in 1944 during the celebration of the Muslim Eid festival, some traditionalists decided to dress as Muslims to pray at a site they designated for themselves at Ota Ona

along Ikorodu –Isin road while the Muslims were having their own at the Praying Ground at old Ikorodu – Sagamu road. After the prayers, the traditionalists returned to the house of the Balogun of Ikorodu, Chief Mabadeje Jaiyesimi dancing and chanting “Ti Magbo La o Se, Ti Anabi La o se” which literally mean ( we will worship Magbo, we will worship Anabi at the same time). The issue almost generated into a squabble when the Chief Imam of Ikorodu wrote a petition to the Commissioner of Colony who helped to resolve the issue amicably with an order stating that the Muslims and Traditionalists should all practice their religious practices without disturbing the peace of the town (NAI, 1944).

It is instructive to state that, the events leading to the confrontations of 1944 did not start that year. Before then, the Muslims have been very vocal in demanding for the abolishment of traditional practices such as the Magbo Festival. With the support of the colonial administration, the Muslims have labelled the traditional religious practice and festivals as evil. What played out in 1944 was a show of resilience against this onslaught. Apart from this incidence, Osugbo group members were also said to have clashed with Muslims over several traditionally sacred or important sites chosen by Muslims to build Mosques for prayers. In the political mechanism of Ikorodu, before, during and after the colonial regime, the role and influence of the Osugbo cannot be underplayed. The Osugbo is the Ijebu version of the Ogboni cult. Lawal (1995) The Ogboni

is one of the more recognizable cultural institutions of social control in Yoruba land. This socio – cultural institution, which existed long before the emergence of European colonialism in Nigeria, has maintained a significant presence in many of the politics comprising Yoruba through the establishment of lodges known as Iledi. In Ijebu kingdom, of which Ikorodu is not an exception, during the precolonial period, the Osugbo cult was saddled with the responsibilities to dispense justice in the kingdom. Headed by the Oluwo, the Osugbo was an integral part of the administrative set up of Ikorodu since the establishment of the town and the powers they wield in Ikorodu reflects the dynamics of traditional religion and power relations in the town.

The resiliency of traditional religious practices in Ikorodu was enacted again in 1951 when Oba Alagbe Adenaike Adegorushen IV became the first Oba to use the title Ayangbure of Ikorodu. Born in Ikorodu in 1854 to the Lasunwon Ruling House, Adegorushen was installed Oloja of Ikorodu on Monday June 3, 1929 at the age of 75, and on Monday April 10, was crowned and became the first Oba with the title of Ayangbure of Ikorodu. He died on Wednesday November 14, 1951 at the age of 97. (Ikorodu Oga Net 2017). One important event occurred during his reign which is worthy of reporting. Before his installation as the first Ayangbure, the British mandated the traditionalists to desist from performing the rituals associated with installation of an Oba but the traditionalists declined and performed

the Magbo and Liwe festivals in 1951 as part of traditional rites which converted Adeorushen from Oloja to Oba (Personal Pa. Jayesimi, 2018). This almost cost Ikorodu community the status of an Oba as the traditionalist insisted they won't put aside their traditional religious practices for British convenience. This went a long way to showcase the determination of traditionalists in Ikorodu to keep a strong hold on their traditional practices.

One fundamental factor that has aided the resiliency of traditional religious practices in Ikorodu was Ikorodu's unapologetic traditional practice and pursuit of religious pluralism in the last century. During and after colonial administration, Ikorodu has continued to practice and uphold its traditional practices despite increased agitations for its abolishment in line with modern best practices and secularity. In 2017 for instance, some market women in Ikorodu and its environs urged the monarchs in the communities to modernize the Oro festival to give it a universal appeal. This agitation has continued since the colonial period. When Christianity made an advent into Ikorodu in 1892 for instance and late Chief Aina Odukanmade (the 1st Mosene) an Iwarefa and one of the most popular and wealthy chiefs with four others welcomed the early missionaries and hoisted the British flag on the soil of Ikorodu. With the backing of the Oloja of Ikorodu, Aina Odubote, Balogun Jaiyesimi and Odukanmade the Lisa of Ikorodu, Christianity started on a good footing but later the Christian

missionaries demanded abolishment of the Oro festival which was held during Easter but this did not go down well with the Ikorodu leaders who did not accept the foreign view that Christianity or Islam is superior and more effective. As a result, the Christian missionaries protested against the Oro and reported the chiefs to the government but the government could not stop the observation of the Oro festival in 1904. From this period, the traditional religious practices and western systems increasingly interfaced and have continued to even after the termination of colonialism.

Being a coastal community was another reason why traditional religious practices have being resilient in Ikorodu. As a matter of fact, it has long been theorized by scholars that the global distribution of religious beliefs may be shaped by ecological factors. Roes and Raymond (2003). There is a close relationship between religion and environment. Environment has had major positive influences on religious practices. For example, the Baha'i faith teaches that the grandeur and diversity of the natural world are purposeful reflections of God. Buddhism teaches that respect for life in the natural world is essential, underpinning the interconnectedness of all that exists. There are stories, mythologies and practices peculiar to coastal cities, and these are connected to the meanings and institutions of politics and how society functions in general as Falola(2017) argued. In coastal communities, certain practices are influenced by the environment and Ikorodu is not an exception. For Instance, there is a



popular deity called ? ta whose chief custodian is a priestess called Iyalode ? ta in Itunmoja Ikorodu. According to Balogun(2017) ? ta is considered to be a woman while ? ta River (Odo ? ta or Odo Alagbaf?) at Itunm?ja is believed to be the symbol of this deity. Before most festivals in Ikorodu are fixed, Iyalode ? ta and other women devotees are expected to perform some rituals which include a ceremonial sweeping of the town and prayers at Odo ? ta with w?r? leaves. The women fetch water from the river and sprinkle around town. In turn, the deity will keep protecting the women folks from harm and dangers including their offspring.

### **Conclusion**

Contrary to the predictions of sociologists and others that modern society will eventually become completely secularised leading to the decline of traditional religion in general and traditional religious practices in particular, it appears that the people of Ikorodu community in Lagos state have continued to be engaged in a wide range of traditional religious and/or spiritual experiences, disciplines, beliefs, practices, etc. that were virtually unimaginable in this modern time. However, this resilience of these practices did not start recently. With the use of archival reports and extant literatures, this paper has historicise the resilience of traditional religious practices in Ikorodu. Tracing it from 1862 when Ikorodu was designated as a British protectorate and it came under the authority of the Colony of Lagos till recently in 2018 as reported by some national newspapers.

### **References**

- Abraham, R. C. (1958).**  
Dictionary of Modern Yoruba,  
London: University of London Press
- American Psychology Association (2018)**  
<http://www.apa.org/helpcenter/road-resilience.aspx>
- Boge, F. I**  
Ikorodu in the Nineteenth Century:  
A Historical Foundation of a Suburban Society
- Beiser F. (2016)**  
Historicization and Historicism.  
In: Baumstark M., Forkel R. (eds)  
Historisierung. J.B. Metzler,  
Stuttgart
- Balogun Y. (2017),**  
The Dynamics of Traditional Religion in the Political Economy of Ikorodu in Yoruba Studies Review (special edition) p 73.
- Falola, T. 2017,**  
Coastal Yorubaland: Habitability, Inhabitation, and Inheritances, Texas, Yoruba Studies Review (special edition) pp 39,40
- Fleming J, and Ledogar R. J. (2008),**  
Resilience, an Evolving Concept: A Review of Literature Relevant to Aboriginal Research. Pimatisiwin: Journal of Aboriginal and Indigenous Community Health;6(2):7–23.
- Luthar S. S. (2006)**  
Resilience in development: A synthesis of research across five decades. In: Cicchetti D, Cohen DJ, editors. Developmental Psychopathology: Risk, Disorder, and Adaptation. New York: Wiley; pp. 740–795.
- Gholam H. J. (2013)**  
Religious Beliefs and Resilience in Academic Students in *Procedia - Social and Behavioral Sciences* Vol. 84 pp 744 – 748 Published by Elsevier Ltd.

- Natalie A. Washington-Weik, (2009),**  
The Resiliency of Yoruba Traditional Healing: 1922-1955. A Dissertation Presented to the Faculty of the Graduate School of The University of Texas at Austin In Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy
- Oduwobi, T. (2004).**  
Ijebu under Colonial Rule, 1892-1960: An Administrative and Political Analysis. Lagos: First Academic.
- Olukoya, O. (2009).**  
"The Slave Trade and its Abolition in Ikale-Yoruba Country, 1659-1890" In Lagos Historical Review, vol. 9, p. 75.
- Olupona, J. (1993),**  
"The Study of Yoruba Religious Tradition in Historical Perspective" in Numen International Review for the History of Religions
- Omotayo, K. C (2017),**  
Individual Agency and the Diversity of Traditional Practice: The Iji Nla Association of Ijede in Yoruba Studies Review (special edition) p 101.  
National Archives of Nigeria at Ibadan. (NAI), COMCOL, 758. 1, Mohammedian Festivals. Ikorodu, December 2, 1944.
- Lawal, B. (1995),**  
"A Ya Gbo, A Ya To: New Perspectives on Edan Ogboni", *African Arts*, 28.1: 36-49, 98-100.  
"Yoruba Religion." (2019) *Encyclopedia of Religion*. . Retrieved April 02, 2019 from Encyclopedia.com : <https://www.encyclopedia.com/environment/encyclopedias-almanacs-transcripts-and-maps/yoruba-religion>
- Roes FL, and Raymond M (2003)**  
Belief in moralizing gods. *Evol Hum Behav* 24(2):126–135
- Insa Nolte, (2013),**  
"Colonial Politics and Precolonial History: Everyday Knowledge, Genre, and Truth in a Yoruba town," *History in Africa*, 40.1 1–40.
- E. Philips, (1970)**  
"The Egba at Ikorodu, 1865: Perfidious Lagos?" *African Historical Studies*, 3.1 23–35
- Ruth Finnegan, (1991)**  
Tradition, But What Tradition and For Whom? *Oral Tradition*, 6/1 pp: 104-124
- Idowu, E. B. (1991).**  
African Traditional Religion A Definition, Ibadan; Fountain Publications, p.1
- James West Turner , (1997)**  
*Continuity and Constraint: Reconstructing the Concept of Tradition from a Pacific Perspective The Contemporary Pacific, Volume 9, Number 2, Fall, 345–381*
- Homer, Alice E. (1990).**  
The Assumption of Tradition: Creating, Collecting, and Conserving Cultural Artifacts in the Cameroon Grassfields (West Africa). Ph.D. dissertation in anthropology, University of California, Berkeley.  
**Peter Berger, (1968).**  
*Sociologist, The New York Times Vanguard News Paper, 28 January (2017)*  
Market women urge Ikorodu monarchs to reform Oro festival.
- The Guardian Newspaper (May 9, 2018)**  
Banks, Schools, Others Shuts down in Ikorodu
- Tribune Newspaper (May 16, 2018),**  
Traders, Residents Appeal for cancellation of Oro

## ECOTOXICOLOGICAL RISK ASSESSMENT AND BIOREMEDIATION OF A DAIRY WASTEWATER BY *ALCALIGENES FAECALIS*

Ayodeji O. Awotula<sup>a\*</sup>, Edwin A. Ofudje<sup>1</sup>, Flourish M. Adediji<sup>2</sup>, Olaitan O.

Olajuyigbe<sup>3</sup> Esther N. Ezima<sup>4</sup>, and Olumide D. Olukanni<sup>5</sup>

<sup>1</sup>Department of Biological Sciences,  
McPherson University, Seriki Sotayo, Ogun State, Nigeria,

<sup>2</sup>Department of Chemical Sciences,  
Mountain Top University, Magboro, Ogun State, Nigeria,

<sup>3</sup>Nigerian Institute for Oceanography and Marine Research,  
Victoria Island, Lagos, Nigeria,

<sup>4</sup>Biochemistry Department, Faculty of Basic Medical Sciences,  
Olabisi Onabanjo University, Sagamu Campus, Ogun State, Nigeria,

<sup>5</sup>Department of Chemical Sciences,  
Redeemer's University, Ede, Osun State, Nigeria.

\*Corresponding author: aoawotula@gmail.com,  
+2348028615634

### Abstract

The dairy industry is one of the major sources of industrial wastewaters contributing to the global wastewater burden. This study evaluated the ecotoxicological risk levels of a dairy wastewater sample from a dairy factory in Ibadan, Nigeria and assessed its bioremediation using whole cells of *Alcaligenes faecalis*. Results from the pollution indices investigated were temperature ( $29 \pm 0.19^\circ\text{C}$ ), pH ( $3.91 \pm 0.29$ ), conductivity ( $1672 \pm 18.12 \mu\text{S/cm}$ ), total alkalinity ( $1208 \pm 11.20 \text{ ppm}$ ), total acidity ( $1240 \pm 18.62 \text{ ppm}$ ), total hardness ( $626.83 \pm 22.70 \text{ ppm}$ ), biochemical oxygen demand (BOD) ( $15.89 \pm 3.51 \text{ mg/l}$ ), chemical oxygen demand ( $19.06 \pm 4.68 \text{ mg/l}$ ), total suspended solids ( $1333 \text{ mg/l}$ ) and total solids ( $1633 \pm 152.75 \text{ mg/l}$ ). The anions and cations ranged from 10.74-53.88 ppm and 22.28-497.39 ppm respectively, while heavy metals were in the range 0.00-2.346 ppm. Parameters such as pH, conductivity, BOD, solids and cadmium were outside acceptable discharge limits recommended by NESREA and WHO and the wastewater had an  $\text{LC}_{50}$  of 6% (v/v) with *Artemia salina* as subjects. The wastewater exposed to *Alcaligenes faecalis* precipitated better growth responses in *Zea mays* seeds compared to the untreated wastewater and elicited zero mortality (100% survival rate) in newly hatched *Artemia salina* nauplii against the 100% mortality triggered by the untreated wastewater; indicating substantial detoxification of the wastewater by *Alcaligenes faecalis*. The study concludes that the dairy wastewater investigated was toxic to the ecosystem and that *Alcaligenes faecalis* has a remarkable potential as a biocatalyst for the bioremediation of hazardous dairy wastewaters.

**Keywords:** Dairy wastewater, detoxification, bioremediation, *Artemia salina*, *Alcaligenes faecalis*

## **Introduction**

Wastewater refers to water that has been altered in quality by anthropogenic influence through domestic, industrial and agricultural activities; often containing pollutants that could have hazardous effects on soil, plants, animals, and man when discharged into the environment without adequate treatment or remediation. Therefore, it comprises all used water that must be treated prior to its release into the environment to avert any adverse impact it could have on the environment and human health (Edokpayi, 2017).

Although industrialization is an important driver of a country's economic development as it ensures job creation through establishment of factories, yet, the by-products discharged from these industries are composed of various kinds of pollutants which contaminate the surface water, groundwater, and soil, leading to a complete disruption of the ecosystem (Ho *et al.*, 2012, Shete and Shinkar, 2013). The discharge of effluents containing metals and other pollutants hastens the deterioration of receiving aquatic habitats (Olaniyi, 2012). Thus, water and groundwater are heavily polluted and rather than serve many useful purposes, they become carriers of toxicants that are hazardous to the environment. On a global scale, environmental pollution caused by these industries through effluent discharge has negative impacts and has become a threat to the ecosystem. Some of these impacts include algal blooms,

habitat destruction, death of aquatic lives and other forms of toxicity from chemical contaminants (Kant, 2012; Hasan and Miah, 2014).

Among all the industries, the food sector is one of the highest consumers of water and therefore one of the biggest producers of wastewater per unit of production and also generates a large volume of sludge (Ramjeawon, 2000; Singh *et al.*, 2014). The dairy industry generates about 2.5 liters of wastewater per liter of processed milk (Shete and Shinkar, 2013) with an estimate of about 2% of the milk processed lost into drains (Munavalli and Saler, 2009). This wastewater is often characterized by high organic load with a concomitantly high biochemical oxygen demand (BOD) and chemical oxygen demand (COD) (Shete and Shinkar, 2013; Chokshi *et al.*, 2016). The presence of oil, grease, nitrogen, and phosphorus are also major characteristics of dairy wastewater (Singh *et al.*, 2014) and hence its capacity to cause eutrophication in the receiving aquatic habitat. The volume and composition of dairy wastewater thus make it one of the most polluting among industrial effluents (Singh *et al.*, 2014).

The conventional methods available for the treatment of industrial wastewaters before discharge into the aquatic ecosystems include biological activated sludge treatment and various physico-chemical methods. However, they are limited in application due to challenges such as high operating cost, complicated process, generation of

hazardous by-products, etc (Osuntoki *et al.*, 2013; Dębowskiet *al.*, 2018). The complexity in treating dairy wastewaters is aggravated by the fluctuating nature of its composition, which is majorly informed by the quantity of milk processed and the type of product being manufactured (Shete and Shinkar, 2013).

Therefore, there is need for continuous monitoring of effluents discharge to check its conformity with the permissible limits or the regulatory standards set by environmental authorities such as National Environmental Standard and Regulation Enforcement Agency (NESREA), United State Environmental Protection Agency (EPA), World Health Organization (WHO), etc. There is also a need for a continuous search for eco-friendly and low-cost alternatives that can be employed in effectively treating wastewaters or effluents. Microbial remediation is considered an emerging viable option in this regard (Royet *al.*, 2018; Olukanni *et al.*, 2019). The present study was conducted to assess the ecotoxicological impacts of a dairy industrial wastewater using brine shrimps and *Zea mays* as test organisms and to treat the wastewater using whole cells of *Alcaligenes faecalis*.

## **MATERIALS AND METHODS**

### **Materials and Sample Collection**

The dairy wastewater was collected from the raw water tank of the effluent treatment plant of a dairy

company in Ibadan, Oyo State, Nigeria. *Zea mays* seeds were obtained from Federal College of Agriculture, Moor Plantation, Ibadan, Oyo State, Nigeria, while brine shrimp eggs were obtained from Nigerian Institute for Oceanography and Marine Research (NIOMR), Lagos State. All reagents used are of the highest purity and analytical grade. A bacterium, *Alcaligenes faecalis* from the microorganisms' culture collection of Biological Sciences Department of McPherson University, Seriki Sotayo, Ogun State was used for the study. The wastewater sample was collected in a sterile 10 L plastic container.

### **Propagation of Microorganism**

The growth media used were nutrient broth obtained from Biomark Laboratories, Pune, India and nutrient agar from Tulip Diagnostics, Verna, India. Nutrient agar (5.6 g) was dissolved in 200 ml distilled water in a 250 ml conical flask already washed and rinsed with distilled water after which, it was plugged with cotton wool and paper foil. The agar solution was placed in a heating mantle until it became homogenous. It was then sterilized at 121 °C for 15 minutes. The agar solution was allowed to cool for some minutes and was dispensed into sterile petri-dishes and McCartney bottles (used to prepare slants) in an inoculating chamber to prevent microbial contaminations after which it was allowed to solidify. The *Alcaligenes faecalis* was sub-cultured by inoculating it into the petri-dishes



containing the medium and the petri-dishes were left in the inoculating chamber for 24 hours for rejuvenation of the microorganism. A pure culture of the grown microorganism was then sub-cultured into a submerged medium prepared by weighing 1.95 g of nutrient broth and dissolving it in 150 ml of distilled water after which it was sterilized in the autoclave at 121 °C for 15 minutes. After 24 hours, the stock culture prepared became cloudy, indicating the multiplication of the organism in the medium.

### **Physico-Chemical Characterization of the Dairy Wastewater**

The physico-chemical parameters were determined according to the standard methods (APHA, 1995 and Ademoroti, 1996). Heavy metals were determined using Atomic Absorption Spectroscopy. UV-Vis Absorbance spectra of the dairy wastewater were obtained with the aid of UV-11 spectrophotometer over a wavelength range, 400 nm-800 nm before and after bioremediation.

### **Biotreatment Assay**

The biotreatment assay was performed by modifying the method of Osuntoki *et al.* (2013). A fresh biotreatment media was prepared by dissolving 1.95 g of nutrient broth powder in 150 ml of 100% (v/v) dairy wastewater and designated dairy wastewater media (DWM). An aliquot (2.5 ml) of a stock broth culture of *A. faecalis* was inoculated into 100 ml conical flasks containing 47.5 ml DWM

to make a total volume of 50 ml. The mixture was then incubated in a water bath at 37 °C under static anoxic batch reaction condition for 7 days and centrifuged at 4000 rpm for 20 minutes to separate the bacterial cells from the treated wastewater. The absorbance of the treated wastewater was scanned before and after treatment in the wavelength range of 400 nm-800 nm. The pH of the untreated and treated wastewaters was also determined and the values were recorded against standard limits of discharge into the environment. The wastewater sample was used without any pretreatment and the experiment was set up in triplicates.

### **Germination Test**

The seed germination test was performed as an index of phytotoxicity by modifying the method of Bae *et al.* (2014). A hole, 1 inch was dug each in soil held in two sets of three different polythene bags, after which three seeds of *Zea mays* were dropped into each of the bags and was covered up with the soil. The contents of one set of bags were watered using untreated dairy wastewater, while that of the other set were watered using treated wastewater for 5 days after which the germinated plants were uprooted and the length of plumule, length of radicle and the leaves sizes were measured in cm.

### **Brine Shrimp Lethality Assay**

The cytotoxicity test was carried out by modifying the method of Awolola *et al.* (2010). Brine Shrimp (*Artemia salina*) eggs were incubated in

seawater at room temperature under continuous illumination for 24 hours. The newly hatched nauplii were harvested and used for the bioassay. The assay system was prepared with 10 ml of wastewater at different concentrations in different test tubes and 10 brine shrimps were placed in the different concentrations of the waste water. After 24 hours, the surviving organisms were counted and a median lethal concentration ( $LC_{50}$ ) was calculated which is the percentage by volume that killed 50 % of the brine shrimps. The experimental set up was in triplicates.

## RESULTS AND DISCUSSION

### Physico-Chemical Parameters

The values for the different physico-chemical parameters and organic matters obtained in the study were compared to the values for the permissible limits set by NESREA (2007) and WHO (2006) as presented in Tables 1-3.

The temperature of the wastewater was  $29.00 \pm 0.19$  °C and conforms to the standard limit of 30 °C set by the regulatory bodies. All aquatic life forms have characteristic temperature preference and tolerance limits. Therefore, any increase in the average temperature of a water body may have ecological impacts.

The acidic pH value of  $3.91 \pm 0.29$  obtained as compared to 6.5-8.5 permissible limit could be as a result of the fermentation of lactose in the milk to lactic acid (Tikariha and Omprakash,

2014). The low pH can lead to the precipitation of casein whereas casein can further decompose into a highly odorous black sludge that can be toxic to fishes (Bharati and Shinkar, 2013; Singh *et al.*, 2014). Also, low pH values impair the recreational uses of water and affect aquatic lives (Ogunfowokan *et al.*, 2005).

Conductivity was observed to be  $1672 \pm 18.12$   $\mu$ S/cm which is beyond the permissible limit of 240  $\mu$ S/cm and 250  $\mu$ S/cm set by NESREA and WHO respectively. Since the electrical conductivity of water is a useful and easy indicator of its salinity or total salt content (Ogunfowokan *et al.*, 2005). The result indicated the wastewater had high salt concentrations, which can, in turn, increase the salinity of the receiving water body with concomitant adverse ecological effects on the aquatic life forms.

The total alkalinity and total acidity of the wastewater had the corresponding values of  $1208 \pm 11.20$  ppm and  $1240 \pm 18.62$  ppm respectively. The values obtained could be as a result of the dairy product(s) manufactured, which leaked into the wastewater. Also, soaps, detergents and other cleaning and sanitizing compounds such as NaOH,  $H_3PO_4$ ,  $HNO_3$ , etc., which constitute the wastewater may be considered as contributing factors to total alkalinity and total acidity.

The value for total hardness (TH) obtained was  $626.83 \pm 22.70$  ppm. Hardness in water is known to be predicated upon the inherent  $CaCO_3$

concentration. The season of collection has also been shown to be an influencing factor due to temperature variation (Tikariha and Omprakash, 2014). In this study, high values TH may have been largely precipitated by the high amount of  $\text{Ca}^{2+}$  ( $497.39 \pm 11.93$ ) relative to other cations.

Dissolved oxygen (DO) was not detected in the wastewater and this could result from organic matters present in the wastewater or the concentration of impurities (EPA, 1996). Effluents from milk processing units or dairy industries decompose rapidly and deplete the dissolved oxygen level of the receiving streams immediately resulting in anaerobic condition and release of strong foul odour of butyric acid (Tikariha and Omprakash, 2014). The lack of dissolved oxygen in the wastewater could negatively impact the receiving aquatic environment since dissolved oxygen is a major factor that determines the quality and health of aquatic habitats. Low concentrations of dissolved oxygen can elicit behavioural changes in fish, while long-term reductions in dissolved oxygen concentrations can cause changes in fish community structure and population dynamics (Franklin, 2013).

Biochemical oxygen demand (BOD) of the wastewater was  $15.89 \pm 3.51$  mg/l and is beyond the permissible limit of 10 mg/l set by NESREA and WHO. This shows the presence of a high quantity of decomposable organic matter in the wastewater. It is established that BOD is a measure of

the organic matter present in a sample of water; the greater the decomposable matter present, the greater the oxygen demand and the greater the BOD (Ademoroti, 1996).

Also, the chemical oxygen demand (COD) of the wastewater was determined to be  $19.06 \pm 4.68$  mg/l. Although it is below the permissible limit of 40 mg/l, it is, however, higher than the BOD. It had been reported that industrial wastewaters usually have COD values higher than BOD because many organic substances, which are difficult to oxidize biologically can be oxidized chemically (Tikariha and Omprakash, 2014). This may explain the higher COD compared with the BOD obtained for the wastewater in this study.

The total dissolved solids (TDS) composition which was  $1333 \pm 152.75$  mg/l is beyond the permissible limit of 200 mg/l by NESREA and 250 mg/l by WHO. Tikariha and Omprakash (2014) showed that seasonal variations impact the dissolution of solids with minimal dissolution observed during the period of the year experiencing lower temperatures. Also, the value for the total suspended solids (TSS) of the wastewater was  $300 \pm 0.00$  mg/l which is beyond the 30 mg/l permissible limit set by the two regulatory bodies. Therefore, it is considered to be toxic to the ecosystem and unsafe for discharge because the release of suspended solids into receiving waters can have some direct and indirect environmental effects, including reduced sunlight penetration (reduced photosynthesis) in

plants, physical harm to fishes and toxic effects from contaminants attached to

suspended particles (Horner *et al.*, 1994).

**Table 1: Some Physico-Chemical Properties Of Dairy Wastewater**

Parameters	Dairy Wastewater	NESREA Limits	WHO Limits
Temperature (°C)	29.00 ± 0.19	30	30
pH	3.91 ± 0.29	6.5-8.5	6.5-8.5
Conductivity (µS/cm)	1672 ± 18.12	240	250
Total Alkalinity (mg/l)	1208 ± 11.20	*NA	NA
Total Acidity (mg/l)	1240 ± 18.62	NA	NA
Total Hardness (mg/l)	626.83 ± 22.70	NA	NA
Biochemical Oxygen Demand (mg/l)	15.89 ± 3.51	10	10
Chemical Oxygen Demand (mg/l)	19.06 ± 4.68	40	40
Total Dissolved Solids (mg/l)	1333 ± 152.75	200	250
Total Suspended Solids (mg/l)	300 ± 0.00	30	30
Total Solids (mg/l)	1633 ± 152.75	230	280

\*NA=Not Available

The major anions and cations present in the wastewater were also assessed and compared with the permissible limits set by NESREA (2007) and WHO (2006) (Table 2). The concentration of sulfate ion ( $\text{SO}_4^{2-}$ ) was determined to be  $53.88 \pm 7.23$  ppm, while phosphate ion ( $\text{PO}_4^{3-}$ ) was  $10.74 \pm 1.05$  ppm. Nitrate ion ( $\text{NO}_3^-$ ) was determined to be  $14.72 \pm 3.83$  ppm, which is within the permissible limit of 44.00 ppm and 50.00 ppm set by NESREA and WHO respectively. Calcium ion ( $\text{Ca}^{2+}$ ) concentration was  $497.39 \pm 11.93$  ppm, while magnesium ion ( $\text{Mg}^{2+}$ ) was  $127.44 \pm 5.77$  ppm. The concentration of sodium ion ( $\text{Na}^+$ ) was  $82.12 \pm 7.60$

ppm, which is beyond the permissible limit of 75.00 ppm set by WHO; this could be as a result of high sodium content from the use of caustic soda for cleaning. Also, the concentration value of  $22.28 \pm 3.39$  ppm determined for potassium ion ( $\text{K}^+$ ) is beyond the permissible limit of 12.00 ppm set by WHO. Tikariha and Omprakash (2014) had reported that the higher concentrations of  $\text{K}^+$  in the dairy effluents they studied were due to a higher influx of potassium in water used in the dairy industry for various productions. This requires caution as potassium toxicity could cause dilatation of the heart, cardiac arrest and small bowel ulcers (Soetan *et al.*, 2010).

**Table 2: Major anions and cations in dairy wastewater**

Parameters		Dairy Wastewater	NESREA Limits	WHO Limits
Anions	SO <sub>4</sub> <sup>2-</sup> (mg/l)	53.88 ± 7.23	*NA	NA
	PO <sub>4</sub> <sup>3-</sup> (mg/l)	10.74 ± 1.05	NA	NA
	NO <sub>3</sub> <sup>-</sup> (mg/l)	14.72 ± 3.83	44.00	50.00
Cations	Ca <sup>2+</sup> (mg/l)	497.39 ± 11.93	NA	NA
	Mg <sup>2+</sup> (mg/l)	127.44 ± 5.77	NA	NA
	Na <sup>+</sup> (mg/l)	82.12 ± 7.60	NA	75.00
	K <sup>+</sup> (mg/l)	22.28 ± 3.39	NA	12.00

\*NA= Not Available

**Table 3: Heavy metals concentrations in dairy wastewater**

Heavy Metals	Dairy Wastewater	NESREA Limits	WHO Limits
Cu (ppm)	0.20	1.0	2.0
Pb (ppm)	*ND	0.01	0.001
Fe (ppm)	2.346	20	20
Cd (ppm)	0.016	0.003	0.005
Mn (ppm)	0.03	*NA	NA

\*NA=Not Available, ND = Not Detected



The composition of most of the heavy metals in the dairy wastewater was within the regulatory limits set by NESREA (2007) and WHO (2006). The copper (Cu) concentration obtained was 0.20 ppm and lead (Pb) concentration was 0.01 ppm, while iron (Fe) and manganese (Mn) were 2.346 and 0.03 ppm respectively. All were within regulatory limits as shown in Table 3. Lead (Pb) was undetected but Cadmium (Cd) composition was 0.016 ppm and this is beyond the permissible limits of 0.003 ppm and 0.005 ppm set by NESREA and WHO respectively. Heavy metals such as cadmium are toxic or poisonous even at low concentrations (Ho *et al.*, 2012).

Therefore, the wastewater is considered unsafe for discharge as heavy metals are regarded as serious pollutants of aquatic ecosystems due to their persistence (Armitage *et al.*, 2007), toxicity, and ability to be incorporated into food chains (Hapke, 1996). Discharge of effluents containing a high level of cadmium concentrations could result in hyperglycemia, reduced immunopotency and anaemia, as it interferes with iron metabolism (Rehman and Sohail, 2010). Furthermore, cadmium in the body had been shown to result in kidney and liver damages and deformation of bone structures (Abbas *et al.*, 2008).

**Table 4: pH of wastewater before and after treatment**

	pH (before treatment)	pH (after treatment)	NESREA Limit	WHO Limit
Dairy Wastewater	3.91 ± 0.29	8.3 ± 0.00	6.5-8.5	6.5-8.5

After treating the dairy wastewater with *Alcaligenes faecalis*, the pH remarkably changed from 3.7 to 8.3 as shown in Table 4. This brings the pH within the permissible limits of discharge (6.5-8.5) set by NESREA and WHO. This indicates bioremediation by the microorganism and suggests the organism was able to survive in the presence of the trace elements and heavy metals shown in Table 3. Therefore, the strain of *Alcaligenes*

*faecalis* used in this study falls among the league of bacteria that could be useful for bioremediation. The ability of *Alcaligenes faecalis* to make use of heavy metals as nutrients to perform its biodegradation activity have been reported (Abo-Amer, *et al.*, 2015). No peak of absorbance was noticeable in the UV-vis spectral scan of the wastewater before and after treatment (Fig. 1). This indicates no apparent chromogenic substance was present in the wastewater.

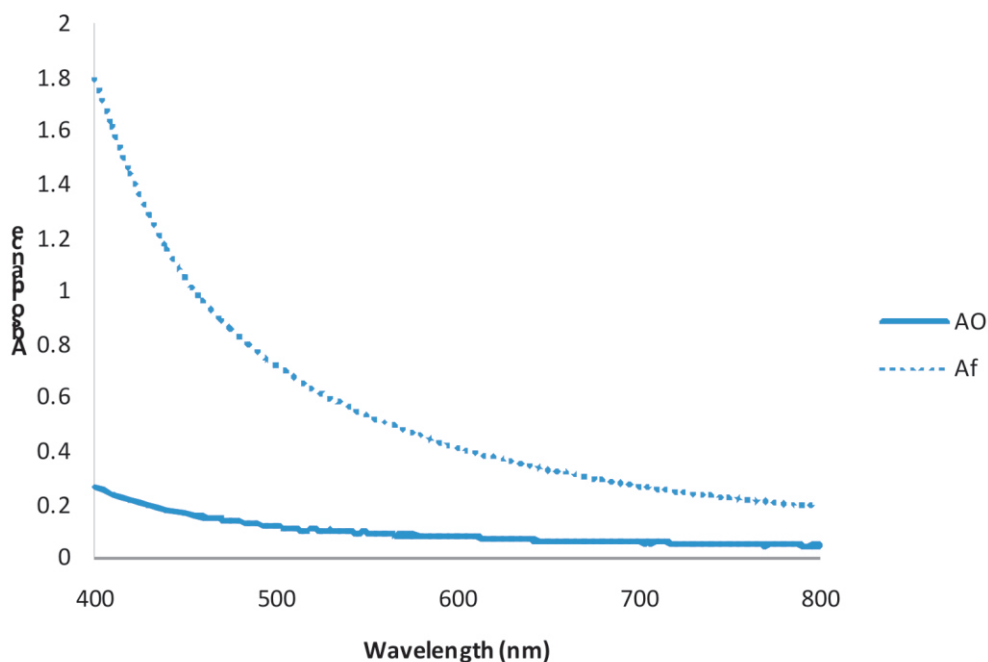


Fig. 1: Absorbance spectra of treated and untreated dairy wastewater  $A_o$  = Absorbance spectrum before treatment;  $A_r$  = Absorbance spectrum after 7 days treatment

### 3.2 Phytotoxicity

The phytotoxicity test revealed slower germination in the length of plumule of the germinating *Zea mays* seeds exposed to the untreated dairy wastewater when compared with the treated wastewater and control (Table 5). The plumule of the seeds became visible on day 4 of germination in which case, the length of plumule of *Zea mays* seeds exposed to the untreated wastewater, the corresponding treated wastewater and tap water (control) were  $0.10 \pm 0.00$  cm,  $1.00 \pm 0.00$  cm and  $1.20$

$\pm 0.17$  respectively. Also, the *Zea mays* seeds exposed to the treated wastewater elicited a better germination response ( $3.00 \pm 1.31$  cm and  $7.51 \pm 0.76$  cm) on day 5 and day 6 of germination respectively when compared to the response ( $1.83 \pm 1.04$  cm and  $4.56 \pm 1.27$  cm) produced in seeds exposed to untreated wastewater respectively. The corresponding values in seeds exposed to tap water (control) were  $4.27 \pm 0.47$  cm for day 5 and  $8.11 \pm 0.54$  cm for day 6. This showed that high concentration of dairy wastewater is toxic to plants' growth and only adequately treated dairy wastewaters or effluents could be used for irrigation purposes (Dhanam, 2009; Gaikar *et al.*, 2010), and planting of seeds for effective germination.

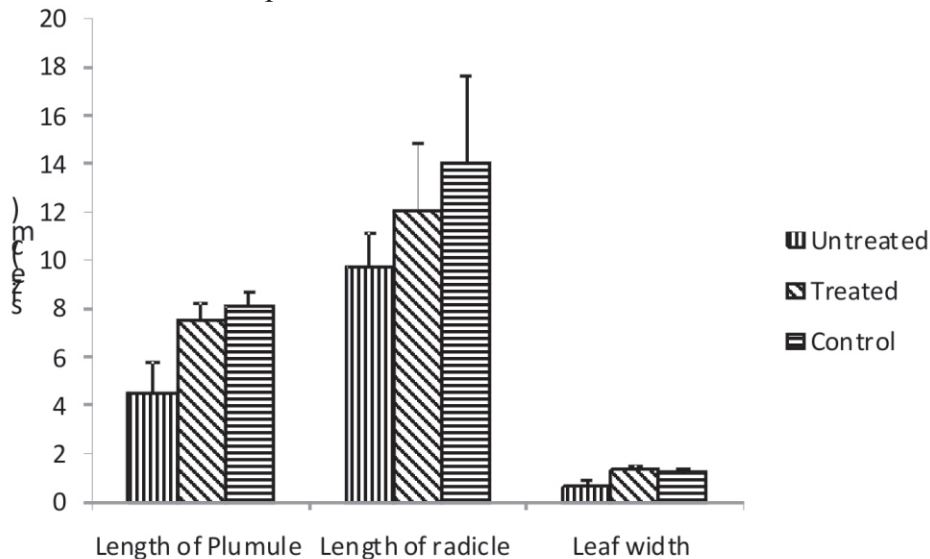
**Table 5: Monitoring of germination (length of plumule)of *Zea mays* seeds**

Day	Untreated	Treated Wastewater(cm)	Control (cm)
	Wastewater(cm)		
1	*NG	NG	NG
2	NG	NG	NG
3	NG	NG	NG
4	0.10 ± 0.00	1.00 ± 0.00	1.20 ± 0.17
5	1.83 ± 1.04	3.00 ± 1.31	4.27 ± 0.47
6	4.56 ± 1.27	7.51 ± 0.76	8.11 ± 0.54

\*NG = No Growth

The length of radicle of germinated *Zea mays* seeds when exposed to treated wastewater was higher when compared with those exposed to the untreated wastewater as shown in Fig. 2. The leaf sizes of germinated plants exposed to the untreated wastewater were also measured and compared with the leaf sizes of germinated plants exposed to the treated wastewater and control as illustrated in Fig. 2 and it was discovered that the ones subjected to the treated wastewater performed better

than the plants exposed to both untreated wastewater and tap water (control). This could be as a result of tolerable levels of nutrients in the treated wastewater due to the activities of the microorganism. Growth inhibition has been associated with metal toxicity (Radić *et al.*, 2010) but results show the remediation activity of *Alcaligenes faecalis* used in this study was effective and suggest the bacterium was able to suppress the excessive pollutants present in the wastewater and used some as a source of nutrient.



**Fig. 2: Growth parameters after 6 days of germination of *Zea mays* seeds in treated and untreated wastewater**

### Cytotoxicity

The cytotoxicity test was carried out to demonstrate the toxicity of the dairy wastewater to brine shrimps at different concentrations. The median lethal concentration ( $LC_{50}$ ) was determined to be 6 % (v/v) in this study and establishes the untreated dairy wastewater's cytotoxic level to brine shrimps. Also, brine shrimps were exposed to treated wastewater at a threshold concentration of 10 % (v/v) and compared with the untreated wastewater at 10 % (v/v) since the  $LC_{50}$  of the untreated wastewater was found to be below 10 % (v/v). The wastewater treated by *Alcaligenes faecalis* elicited zero mortality (100% survival rate) in newly hatched *Artemia salina* nauplii after 24 h

exposure against the 100% mortality (0% survival rate) triggered by the untreated wastewater. This indicates the organism, *Alcaligenes faecalis* has been able to substantially detoxify the dairy wastewater, thereby making it favourable for the survival of the brine shrimps. This is a supporting evidence of the bioremediation of the wastewater by *A. faecalis*. Brine shrimp lethality assay has been used as a standard protocol to assess cytotoxicity (Awolola, 2010, Ravichandran, 2015). However, to the best of the authors' knowledge, there is a paucity of information on the cytotoxicity of raw and bioremediated dairy wastewater in *Artemia salina* but this is now reported in this work.

**Table 6: Mortality of *Artemia salina* after 24 hours of exposure to untreated and treated dairy wastewater at a threshold concentration of 10 % (v/v)**

Parameter	Untreated Wastewater	Treated Wastewater	Control (Sea Water)
% Mortality	100 ± 0	0	20 ± 20

### Conclusion

The study confirmed the potential versatility of *Alcaligenes faecalis* as a bioremediation tool for industrial wastewaters. It also revealed that the treated industrial dairy wastewater could be useful for irrigation or safely discharged into receiving water bodies without harming aquatic life forms. Industries should carry out environmental risk assessments properly before discharging their wastewaters and should employ bioremediation in treating these

wastewaters as it provides an eco-friendly and cost-effective alternative to the conventional methods.

### References

- Abbas, A.F., Ismail, N. and Easa, A.M. (2008). Assessment of arsenic and heavy metal contents in cockles (*Anadara granosa*) using multivariate statistical techniques. *Journal of Hazardous Materials*, 150(3): 783-789.

**Abo-Amer, A. E., El-Shanshoury, A. E.-R. R., & Alzahrani, O. M. (2015).**

*Isolation and molecular characterization of heavy metal-resistant *Alcaligenes faecalis* from sewage wastewater and synthesis of silver nanoparticles. Geomicrobiology Journal, 32(9): 8 3 6 – 8 4 5 .*

**Ademoroti, C.M.A. (1996).**

*Standard method for water and effluent analysis. Environmental Chemistry and Toxicology.* March prints and Consultancy, Foludex Press Limited, Ibadan, pp. 182-251.

**American Public Health Association (1995).**

*Standard Methods for Estimation of Water and Wastewater* (19th ed.). Byrd Prepress Springfield, Washington, p. 1.

**Armitage, D.R., Plummer, R., Berkes, F., Arthur, R.I., Charles, A.T., Davidson-Hunt, I.J., Diduck, A.P., Doubleday, N.C., Johnson, D.S., Marschke, M., McConney, P., Pinkerton, E.V. and Wollenberg, E.K. (2007).**

*Adaptive co-management for social ecological complexity. Frontiers in Ecology and the Environment, 7(2): 95-102.*

**Awolola, G.V., Oluwaniyi, O.O., Solanke, A., Dosunmu, O.O. and Shuiab, A.O. (2010).**

*Toxicity assessment of natural and chemical coagulants using brine shrimp (*Artemia salina*) bioassay. International Journal of Biological and Chemical Sciences, 4(3): 633-641.*

**Bae, J., Mercier, G., Watson, A. K. and Benoit, D. L. (2014).**

*Seed germination test for heavy metal phytotoxicity assessment. Canadian Journal of Plant Science, 94: 1519-1521.*

**Bharati, S.S. and Shinkar, N.P. (2013).**

*Dairy industry wastewater sources, characteristics and its effects on environment. International Journal of Current Engineering and Technology, 3(5): 1611-1615.*

**Chokshi, K., Pancha, I., Ghosh, A. and Mishra, S. (2016).**

*Microalgal biomass generation by phycoremediation of dairy industry wastewater: An integrated approach towards sustainable biofuel production. Bioresource Technology, 221: 455-460.*

**Dębowski, M., Zieliński, M., Kisielewska, M., Krzemieniewski, M., Makowska, M., Grądkowski, M. and Tor-Świątek, A. (2018).**

*Simulated dairy wastewater treatment in a pilot plant scale magneto-active hybrid anaerobic biofilm reactor (MA-HABR). Brazilian Journal of Chemical Engineering, 35 (2): 553 – 562.*

**Dhanam, S. (2009).**

*Effect of dairy effluent on seed germination: Seedling, growth and biochemical parameters in paddy. Botany Research International, 2(2): 61-63.*

**Edokpayi, J.N., Odiyo, J.O. and Durowoju, O.S. (2017).**

*Impact of Wastewater on Surface Water Quality in Developing*



- Countries: A Case Study of South Africa. In: *Tutu, H. Water Quality*. IntechOpen, pp 401-416. Available from. Accessed on 7th January, 2020.
- U.S. Environmental Protection Agency (EPA) (1996).**  
Management of Water Treatment Plant Residuals. *American Society of Civil Engineers and American Water Works Association. Technology Transfer Handbook*. Washington DC. Available from <http://www.EPA/625/R-95/008>. Accessed on 4th April, 2017.
- Franklin, P.A. (2014).**  
Dissolved oxygen criteria for freshwater fish in New Zealand: a revised approach. *New Zealand Journal of Marine and Freshwater Research*, 48 (1): 112-126.
- Gaikar, R.B., Uphade, B.K., Gadhave, A.G. and Kuchekar, S.R. (2010).**  
Effect of dairy effluent on seed germination and early seedling growth of soyabeans. *RASAYAN Journal of Chemistry*, 3(1): 137-139.
- Hapke, H.J. (1996).**  
Heavy metal transfer in the food chain to humans. In: Rodriguez-Barrueco, C. (Ed.). *Fertilizers and Environment*. Kluwer Academic Publishers, Dordrecht, pp. 431-436.
- Hasan, K. and Miah, M. (2014).**  
Impacts of textile dyeing industries effluents on surface water quality: A study on Araihaazar Thana in Narayanganj District of Bangladesh. *Journal of Environment and Human*, 1 (3): 8-22.
- Ho, Y.C., Show, K.Y., Guo, X.X., Norli, I., Abbas Alkarkhi, F. and Morad, N. (2012).**  
Industrial discharge and their effects to the environment. In: Show, K.Y. (Ed.). *Industrial Waste*. IntechOpen, pp. 1-32. Available from <https://www.intechopen.com/books/industrial-waste/industrial-emissions-and-their-effect-on-the-environment>. Accessed on 27th November, 2019.
- Horner, R.R., Skupien, J.J., Livingstone, E.H. and Shaver, H.E. (1994).**  
*Fundamentals of urban runoff management: Technical and Institutional Issues*. Terrene Institute, Washington DC, pp. 3-88.
- Kant, R. (2012).**  
Textile dyeing industry an environmental hazard. *Natural Science*, 4(1): 22-26.
- Munavalli, G.R. and Saller P.S. (2009). Treatment of dairy wastewater by water hyacinth. *Water Science Technology*, 59: 713-722.
- NESREA (2007).**  
*National Environmental Standards and Regulation Enforcement Agency (NESREA) Regulations*. The Federal Government Printer, Abuja, Nigeria.

- Ogunfowokan, A.O., Okoh, E.K., Adenuga, A.A. and Asubiojo, O.I. (2005).**  
An assessment of the impact of point source pollution from a university sewage treatment oxidation pond on a receiving stream. *Journal of Applied Science*, 5(1): 36-43.
- Olaniyi, I., Raphael, O. and Nwadiogbu, J.O. (2012).**  
Effect of Industrial Effluent on the Surrounding Environment. *Archives of Applied Science Research*, 4(1): 406-413.
- Olukanni, O., Awotula, A., Osuntoki, A. and Govindwar, S. (2019).**  
Influence of redox mediators and media on methyl red decolorization and its biodegradation by *Providencia rettgeri*. *SN Applied Sciences*, 1:697.
- Osuntoki, A., Awotula, A. and Olukanni, O. (2013).**  
Kinetics of the decolourization of a dyehouse effluent by *Providencia rettgeri* ODO. *International Journal of Environmental Studies*, 70(4): 515-526.
- Radić, S., Stipaničev, D., Cvjetko, P., Mikelić, I., Rajčić, M., Širac, S., [Pevallek-Kozlina, B.](#) and [Pavlica, M.](#) (2010).**  
Ecotoxicological assessment of industrial effluent using duckweed (*Lemna minor*) as a test organism. *Ecotoxicology*, 19(1): 216-222.
- Ravichandran, S., Christy, S.S., Prabhakaran, T.M., Muthukumar, R., Jasmine, P.E.S., Siraj, J.F. and Selvakuma, S. (2015).**  
In-vivo cytotoxic activity of *Terminalia arjuna* leaf extracts using brine shrimp (*Artemia salina*) and Phytochemical Screening, *Asian Journal of Research in Biological and Pharmaceutical Sciences*, 3(3): 95 -102.
- Rehman, A. and Sohail Anjum, M. (2010).**  
Multiple metal tolerance and biosorption of cadmium by *Candida tropicalis* isolated from industrial effluents: Glutathione as detoxifying agent. [\*Environmental Monitoring and Assessment\*](#), 174(1): 585-595.
- Roy, D.C., Biswas, S.K., Saha, A.K., Sikdar, B., Rahman, M., Roy, A.K., Prodhan, Z.H. and Tang, S. (2018).**  
Biodegradation of Crystal Violet dye by bacteria isolated from textile industry effluents. *PeerJ*, 6:e5015.
- Shete, B.S. and Shinkar, N.P. (2013).**  
**Dairy Industry Wastewater Sources, Characteristics & its Effects on Environment.** *International Journal of Current Engineering and Technology*, 3 (5): 1611-1615.

**Singh, N. B. Singh, R. and Imam, M.I. (2014).**

Waste water management in dairy industry: pollution abatement and preventive attitudes. *International Journal of Science, Environment and Technology*,3(2): 672-683.

**Soetan, K. O., Olaiya, C. O. and Oyewole, O. E. (2010).**

The importance of mineral elements for humans, domestic animals and plants: A review. *African Journal of Food Science*,4(5): 200-222.

**Tikariha, A. and Omprakash, S. (2014).**

Study of characteristics and treatments of dairy industry wastewater. *Journal of Applied and Environmental Microbiology*,2(1): 16-22.

**World Health Organization (2006).**

*Guidelines for the Safe Use of Wastewater and Excreta* (Vol. 3). World Health Organisation Press, Geneva, Switzerland, pp. 19-30.

**BOOK REVIEW**  
**BY**  
**OMOMIA O. AUSTIN PhD**  
**DEPARTMENT OF RELIGIOUS STUDIES**  
**McPHERSON UNIVERSITY,**  
**KM. 96, LAGOS-IBADAN EXPRESSWAY,**  
**SERIKI-SOTAYO, OGUN STATE. NIGERIA.**  
**Tel.: +234-8033031035**  
**E-Mail: [austin.omomia@yahoo.com](mailto:austin.omomia@yahoo.com)**

**Title:** *SUICIDE the forever decision.*

**Author:** Quinnett G. Paul.

**Publisher:** QPR Institute, Washington. 2014.

**Pages:** pp.100. **Price:** Not Stated.

---

The book "*Suicide the forever decision*" discusses the concept of suicide and encapsulates the importance of seeking help in approaching the vicissitudes of life. It also draws attention to the effect of suicide on those left behind, and the value of developing an ideal philosophy about death and living. The one hundred paged book contains nineteen chapters and a section each for the table of content, introduction and an epilogue. The book is neatly structured and each chapter is laid out in simple English. The book, by and large, makes an interesting reading for scholars of Philosophy of Religion, Religion, Sociology, Psychology, Medicine and others. It avoids technical terms which often characterize some common works in the area of suicidology. The author, who is a clinical psychologist, also serves as a Clinical Assistant Professor in the Department of Psychiatry and Behavioural Science at the University of Washington, School of Medicine in Seattle, Washington, U.S.A. He captured his expertise in discussing relevant aspects of suicide.

The introductory section, which covers pages two and three, is more of a personal write up from the author to the reader. In the author's opinion, through a book of this nature, those who are contemplating suicide, would appreciate that help is not far, therefore, would not wish to take their life. Chapter One which runs from pages four to six, utilized the author's opinion about the feeling that those who have made up their minds to commit suicide always express. He concludes with the fact that the suicide feels that he has finally found a solution to a problem he has struggled with, which reflects a great relief since the huge burden has been let down.

Chapter Two highlights the fact that suicide is an idea that was probably acquired through information or other means. In other words, the one, who contemplates or commits suicide, probably got the idea about dying from someone. Suicide is not a new phenomenon; it has been in existence, as people have been willingly taking their live. Chapter Three deals elaborately with the issue of whether man has the right to die, by employing

his/her efforts in accomplishing such. That is by taking his own life. According to the author, you do not have the right to die or take your own life. He hinges his position on the legal implications of such act and the fact that the giver of life, as claimed by different religious groups, is the only one who has the right to take life and not you, the recipient of life.

In the fourth chapter the author examined the implication of ambivalence with regards to suicide. He concludes by stating clearly that there are some people who are ambivalent about taking their life. In this instance, he contends that those who contemplate suicide have only considered two options.

The fifth chapter captured an attempt by the author to express some counselling tips. He requests that the one contemplating suicide should take a step backwards. This indicates the need for a rethink. He stretched his counsel further by declaring that in the next few days or hours, something may happen that would give such an individual, reasons to live. In chapter six the author considered the value of sharing some issues of concern with others. Such information should be shared with significant others by the one considering suicide. He argued in this chapter that no one should feel that he is the only one capable of solving all the problems of life. For example, if the one considering suicide has sufficient information that someone out there loves him or her, or that the challenging situation at that time could actually change, then he/she may have a rethink. In the subsequent eight chapters, that is,

chapters seven to fifteen, the author enumerated some of the causes of suicide. According to him, they include the following: loneliness, depression, being angry with oneself, stress, hopelessness, drugs and other fatal mistakes, feeling unloved and lack of success in an initial attempt to commit suicide. The entire chapters converged at the point that no matter how authentic anyone who has committed or planning to commit suicide may justify his position, suicide is not the ultimate solution to the vicissitudes of life.

Chapter sixteen runs from pages eighty to eighty four. The author considered the situation that confronts those that the one who committed suicide left behind. According to him, they may include parents, wives, children, brothers, sisters, cousins, uncles, aunts, friends, school mates, work mates and others who have one form of affinity or relationship with the one who committed suicide. These people are commonly referred to as victims by most professionals who deal with suicide cases. Those who are related to anyone who committed suicide are described as victims due to the fact that they are likely to suffer great consequences due to the incident.

In the last three chapters, which are, seventeen, eighteen and nineteen, the author emphasized on the value of time, getting help and having a positive philosophy about life. In his opinion, time heals. This means that the one, who is contemplating suicide, soon discovers that those issues that bothered him are soon overtaken within the space of time. The author, in chapter eighteen presents the fact that though we may

feel reluctant to demand for help, there are actually avenues where help could be galvanized. He listed the following: phone lines where you could reach out to those who are available to assist. Others include specialized professionals, physicians, Psychiatrists, Psychologists, Social Workers, Psychiatric doctors, Clinicians and Licensed Professional Counsellors, the Clergy, Drug and Alcohol Treatment Specialists.

The author concludes in chapter nineteen that there is the need to develop a positive philosophy about life. That is to hold the belief that, "life, despite its pains and disappointments is, in the final analysis, better than whatever death holds for us."

In closing, the author gave a summary of the report from some who have read the book. Several of them declared that the book gave them hope and the desire to live. Others also admitted that the book enabled them to glean some modest understanding about suicide.

Despite the above, the book, in the opinion of the reviewer, had some failings. First, the title gives an impression that the author was going to dwell elaborately on suicide and not necessarily on the value of staying alive. The book, in its entirety, appeared as an appeal to appreciate staying alive as compared to suicide as an alternative to the challenges of life. The reviewer would recommend a title of this nature: *"Suicide: Not the Right Option to Life's Challenges."*

Another shortcoming of the book was in its "chaptalization". There appeared to be too many chapters. This

led to repetition. In the opinion of the reviewer, the author would have been able to compress some of these chapters that conveyed similar opinions and ideas.

Another major shortcoming is the fact that the book appeared more like a personal compendium of the encounters that the author had. Although these experiences could be generalized, care must be taken, however, to appreciate the fact that the situation may not always be the same in most climes. There are definitely other vagaries, like culture, location and prevailing circumstances. It becomes difficult for such experiences to be out rightly "generalizable".

The author did not cite any source throughout the entire book. This gives an impression that the work could not be said to have met the contemporary academic expectations. In spite of the attempt to contribute to knowledge, it is expected that an authentic academic piece should glean relevant information from authentic literatures. This, no doubt would guaranty a robust academic report. The book apart from not having any in-text citation did not also have a section on major sources for the entire writer-up. In other words, there was no clear section on references or bibliography.

The above short comings notwithstanding, the book is quit educative and revealing. It makes an interesting reading as the author made efforts to reveal some of his personal experiences and encounters with those who have attempted suicide. This, no doubt, brings the entire challenge of suicide to a deeper public awareness.



An elaborate concern was shown towards the need to build a positive philosophy of life. Apart from this, the author also dealt fully with areas where help could be sought with regards to suicide ideation, attempted suicide or victims of suicide.

He enumerated the different people who could be useful as specialists or counsellors in this regards. Unlike some books, the author recognized, apart from Clinical therapists, the valuable role that the clergy can play with respect to advancing some panaceas to the problem of suicide.

In the subsequent eight chapters, that is, chapters seven to fifteen, the author enumerated some of the causes of suicide. According to him, they include the following: loneliness, depression, being angry with oneself, stress, hopelessness, drugs and other fatal mistakes, feeling unloved and lack of success in an initial attempt to commit suicide. The entire chapters converged at the point that no matter how authentic anyone who has committed or planning to commit suicide may justify his position, suicide is not the ultimate solution to the vicissitudes of life.

Chapter sixteen runs from pages eighty to eighty four. The author considered the situation that confronts those that the one who committed suicide left behind. According to him, they may include parents, wives, children, brothers, sisters, cousins, uncles, aunts, friends, school mates, work mates and others who have one form of affinity or relationship with the one who committed suicide. These people are commonly referred to as

victims by most professionals who deal with suicide cases. Those who are related to anyone who committed suicide are described as victims due to the fact that they are likely to suffer great consequences due to the incident.

In the last three chapters, which are, seventeen, eighteen and nineteen, the author emphasized on the value of time, getting help and having a positive philosophy about life. In his opinion, time heals. This means that the one, who is contemplating suicide, soon discovers that those issues that bothered him are soon overtaken within the space of time. The author, in chapter eighteen presents the fact that though we may feel reluctant to demand for help, there are actually avenues where help could be galvanized. He listed the following: phone lines where you could reach out to those who are available to assist. Others include specialized professionals, physicians, Psychiatrists, Psychologists, Social Workers, Psychiatric doctors, Clinicians and Licensed Professional Counsellors, the Clergy, Drug and Alcohol Treatment Specialists.

The author concludes in chapter nineteen that there is the need to develop a positive philosophy about life. That is to hold the belief that, "life, despite its pains and disappointments is, in the final analysis, better than whatever death holds for us."

In closing, the author gave a summary of the report from some who have read the book. Several of them declared that the book gave them hope and the desire to live. Others also admitted that the book enabled them to glean some modest understanding about suicide.

Despite the above, the book, in the opinion of the reviewer, had some failings. First, the title gives an impression that the author was going to dwell elaborately on suicide and not necessarily on the value of staying alive. The book, in its entirety, appeared as an appeal to appreciate staying alive as compared to suicide as an alternative to the challenges of life. The reviewer would recommend a title of this nature: "Suicide: Not the Right Option to Life's Challenges."

Another shortcoming of the book was in its "chaptalization". There appeared to be too many chapters. This led to repetition. In the opinion of the reviewer, the author would have been able to compress some of these chapters that conveyed similar opinions and ideas.

Another major shortcoming is the fact that the book appeared more like a personal compendium of the encounters that the author had. Although these experiences could be generalized, care must be taken, however, to appreciate the fact that the situation may not always be the same in most climes. There are definitely other vagaries, like culture, location and prevailing circumstances. It becomes difficult for such experiences to be out rightly "generalizable".

The author did not cite any source throughout the entire book. This gives an impression that the work could not be said to have met the contemporary academic expectations. In spite of the attempt to contribute to knowledge, it is expected that an authentic academic piece should glean relevant information from authentic literatures. This, no doubt would guaranty a robust academic report.

The book apart from not having any in-text citation did not also have a section on major sources for the entire writer-up. In other words, there was no clear section on references or bibliography.

The above short comings notwithstanding, the book is quit educative and revealing. It makes an interesting reading as the author made efforts to reveal some of his personal experiences and encounters with those who have attempted suicide. This, no doubt, brings the entire challenge of suicide to a deeper public awareness. An elaborate concern was shown towards the need to build a positive philosophy of life. Apart from this, the author also dealt fully with areas where help could be sought with regards to suicide ideation, attempted suicide or victims of suicide. He enumerated the different people who could be useful as specialists or counsellors in this regards. Unlike some books, the author recognized, apart from Clinical therapists, the valuable role that the clergy can play with respect to advancing some panaceas to the problem of suicide.

In conclusion, it can be safely said that the author has given the readers some level of information and insight into the challenge of suicide. Thus, he has contributed to the body of literature that address the issue of suicide. This issue is of concern to both the Religionists, Philosophers, Psychologists, Sociologists, Medical Practitioners, Counsellors, and others who are concerned about the wellbeing of man. The book would be of great delight to the general reader as well as the scholars who may consult it as reference material on the subject of suicide.

## ***Book Review***

