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## Articles

<b>Lingua Franca Challenges in Native English Language Teaching and Achievement of ‘Perma’ .....</b>	<b>69</b>
<i>Dr. Naveed Shibli psa, Ph.D .....</i>	<i>69</i>
<b>Characteristics of Land Use in Residential Estates in Lagos, Nigeria.....</b>	<b>73</b>
<i>ADEBAYO, Michael Adedayo .....</i>	<i>73</i>
<i>OJO, Babajide .....</i>	<i>73</i>
<b>Determination of active ingredient and dissolution of common brands of paracetamol tablets using classical and instrumental analytical methods. ....</b>	<b>82</b>
<i>Chionyedua Theresa Onwordi.....</i>	<i>82</i>
<i>Anthony Owoichio Agbo .....</i>	<i>82</i>
<i>Anthony Babajide Ojekale .....</i>	<i>82</i>
<b>Determining the Ideas and Thoughts of Language Teachers about the Impact of Cultural Based Activities in Foreign Language Teaching .....</b>	<b>90</b>
<i>Yakup Doganay .....</i>	<i>90</i>
<b>The Impact of Oil Related Costs on the Growth of the Nigerian Economy.....</b>	<b>100</b>
<i>Abachi Terhemem Philip .....</i>	<i>100</i>
<b>The role of People’s participation, monitoring and evaluation in the successful implementation of Niger Delta Development Commission (NDDC) projects in selected communities in Imo State.....</b>	<b>125</b>
<i>Alphonsus O. Isidiho.....</i>	<i>125</i>
<i>Prof. Dr. Mohammad Shatar B. Sabran .....</i>	<i>125</i>

# *Lingua Franca Challenges in Native English Language Teaching and Achievement of 'Perma'*

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Can lingua franca situation in native teacher student interaction pose 'challenges' to make or break various existing 'stereotypes' about linguistic competence because caregivers, peers and culture affect higher functions and how do such affect zone of proximal development in case of English language teaching in Pakistan as a religious society are subject to Jung's 'individuation Sigmund Freud's complexes moreover, how do such inferiority complexes as described by Adler contribute for PERMA positively or negatively through teachers is important to note because to Chand 2006 the best teacher is , "neither the native nor the non-native speaker, but the person' who can develop among students to, "acquire interest in and curiosity about 'otherness', and an awareness of themselves and their own cultures seen from other people's perspectives"

**Keywords:** Lingua franca, Challenges, Personal Growth, Linguistic Competence PERMA

English language as a subject in formal education in Pakistan is a compulsory subject from primary education to higher secondary school level and entire community maintains special regards for the teachers those teach English language at any level such 'regards' could be associated with, 'person perception', interpersonal causality Heider 1958 in (Hastrof et al 1970) or distinctiveness or causality Kelley 1967 in (Hastrof et al 1970) and can affect 'attitudes' and behaviors, Shaw 1979 in (Meyer 1979), so the social influence in case of English language teaching and English language teacher is important and is capable of causing an impact not only on socialization but also enculturation process because in a recent research it has been established that English language teachers while teaching English language in other cultures not only experience various cultural phenomenon but are also subject to various stereotypes (Ani and Cong 2012)

It is an established fact that Pakistan till today has not fully explored its 'socio-economic potential like Israel and other established religious states and likely national states in case of if yes Scotland in 2016 so the term 'under developed society' is applicable and one of the features of under developed societies is that such possess a great room for believing reacting or creating stereotypes moreover, English language due to its association with British rule as its native language before partition has an ample psychological ground due to the socio-historic perspective and existing socio-political scene for the cultivation of non scientific stereotypic notions about English language and English language teachers and such situation furthers due to the prevalence of lingua franca (Chand 2006) state in case of English language teaching that adds to the complications because teachers perhaps focus to produce 'mediators' instead of 'native speakers' (Chand 2006) that could hinder the process of linguistic competence.

Moreover, since child learns from parents and teachers (Vygotsky 1986) so the presence of lingua franca in case of English language teaching and learning in Pakistan may be at unconscious or subconscious level that could transfer phenomenon from 'interpsychological' to later 'intrapyschological' situation (Vygotsky 1986) and such could be a continuous process because Pakistan as a state came into being on the basis of religion and care for others, fairness, loyalty, authority and purity do exist in Pakistani culture in a similar fashion as it exists in other cultures with various different shades (Haidt 2006) but can provisions for culture switching exist in lingua franca situation to produce native speakers? Because it is established that, "matters of cogency, which concern the content of one's arguments, should be distinguished from matters of reasoning" (Maynes 2013) and "Chinese students studying at American universities face special challenges in value-centered humanities courses as cultural outsiders" (Sher 2013).

Existing indigenous student teacher interaction in case of English language teaching deserves intellectual attention and intervention if needed due to the assumed prevalence of conflict at sub conscious or unconscious level both among English language teachers and students that can cause hindrance for individuation that according to Jung is the 'heart of religion' moreover if such proposition prevails such could be capable of causing conflicts between student teacher relations because Freudian id complexes like Oedipus possess the potential to produce anti authority trends against teachers a father figure and generalized hostility in our society as a common prevailing social state.

Moreover in case of under discussion situation if the feeling that 'something is lacking' or 'something more is needed' or 'something needed is not there' is persistent inferiority as advocated by Adler could result into exaggerated superiority feelings leading to various discriminatory behaviors and unrealistic standards leading to 'confusion' and ambiguity that

could lead to learned helplessness (Seligman 1975) and how do such state of affairs is contributing to “Positive emotion, Engagement, Relationships, Meaning and Achievement”, the famous PERMA (Seligman, Martin 2011) is important to be realized.

Because only teachers are capable of adding positively to the critical situation because, “Committed and thoughtful teachers and educators, translate their knowledge, expertise, skills and research work for bringing innovations in the teaching learning process” (Raina 2013) and such is not possible because “teaching profession has been reduced to a marginal identity” (Salifu, Agbenvega2013). And such is not the case in Pakistan it is a ‘global’ issue (Salifu, Agbenvega2013) and there is an unavoidable need for, “enhancing teachers' identity and motivation to practice” (Salifu, Agbenvega2013).

Chand 2006 rightly said, that the best teacher is, “neither the native nor the non-native speaker, but the person’ who can develop among students to, “acquire interest in and curiosity about 'otherness', and an awareness of themselves and their own cultures seen from other people's perspectives” and perhaps that is what is needed because Maya Angelou once said, “This is the value of the teacher, who looks at a face and says there's something behind that and I want to reach that person, I want to influence that person, I want to encourage that person, I want to enrich, I want to call out that person who is behind that face, behind that color, behind that language, behind that tradition, behind that culture. I believe you can do it. I know what was done for me”.

And yet there is another solution to address the ‘challenge’ that entire Scripture reveals for example Quran states, “Read: In the name of thy Lord Who createth.”, “Who teacheth by pen,” “Teacheth man that which he knew not,”. But to practice this proposition man needs to know about the doors of knowledge like Ali RA from where one can reach to the city of knowledge Prophet Muhammad the last Prophet God deputed for the guidance of mankind and who told people that he is the city of knowledge like great messengers Moses and Jesus those earlier made the same claim.

## References

- Ani Derderian-Aghajanian Wang Cong Cong , “ How Culture Affects on English Language Learners’ (ELL’s) Outcomes, with Chinese and Middle Eastern Immigrant Students ” International Journal of Business and Social Science Vol. 3 No. 5; March 2012
- Chad Nilep “Code Switching” in Sociocultural Linguistics Colorado Research in Linguistics. June 2006. Vol. 19. Boulder: University of Colorado.
- Haidt Jonathan 2006 The Happiness Hypothesis Basic Books ISBN978-0-465-02802-3
- Maynes Jeffrey, Thinking about Critical Thinking December 2013 Teaching Philosophy Volume 36, Issue 4
- Meyer, E. Merle Foundations of Contemporary Psychology, 1979 Oxford University Press
- Hostrol.A.H, Schneider.D.I, and Polefka.J, Person Perception Reading,.Mass: Addison-Wesley,tice-Hall, 1975
- Raina B.L. THE PROCESSES AND STRATEGIES FOR DEVELOPING INNOVATIONS IN SCHOOLS, MIER Journal of Educational Studies, Trends and Practices Vol 3, No 1 (2013)
- Sher Shlomo Thinking about Critical Thinking December 2013 Teaching Philosophy Volume 36, Issue 4
- Seligman E. P. Martin (1975). Helplessness: On Depression, Development, and Death. San Francisco: W.H. Freeman. ISBN 0-7167-0752-7. (Paperback reprint edition, W.H. Freeman, 1992, ISBN 0-7167-2328-X)
- Seligman, Martin E.P. (6 July 2011). "Flourish". Royal Society of Arts. audio, video
- Salifu Inusah, Agbenyega Joseph Seyram (2013) TEACHER MOTIVATION AND IDENTITY FORMATION: ISSUES AFFECTING PROFESSIONAL PRACTICE MIER Journal of Educational Studies, Trends and Practices Vol 3, No 1
- Vygotsky, L.S. (1978). Mind in Society. Cambridge, MA: Harvard University Press.
- Vygotsky, L. (1986). Thought and language. Cambridge, MA: The MIT Press.

# *Characteristics of Land Use in Residential Estates in Lagos, Nigeria.*

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## **Abstract**

The study focuses on the characteristics of land use in residential estates in Lagos with a view to examining and assessing the efficient use of the estate lands. Three estates in Lagos namely, Ikeja GRA (low density), Ajao Estate (medium density) and Oyadiran Estate (high density) are purposively chosen for the study. A total number of 808 structured questionnaires were administered on sampled land owners/ landlords out of which 542 (67%) were found useful for the study. The study found that residential plots have been increased from their original allocation by 19.5%, 6.4% and 6.8% in Ikeja GRA, Ajao Estate and Oyadiran Estate in that order. Conversely, lands meant for roads and other uses have been reduced due to encroachment by residential use. From these findings, it can be concluded that there is a contravention of development proposals for the residential estates in Lagos through encroachment of residential uses on roads, open spaces, green belts and parks. To avoid this continued misuse of the land, the town planning offices and the relevant agencies managing the estates should rise up to their responsibilities in monitoring physical developments in the estates.

**Keywords:** Land use, Residential estate, Housing density, Land use change

## 1. Introduction

According to Environmental Literacy Council (2002), land use is a term used to describe the various ways in which human beings make use of the land and its resources, including farming, mining, building or grazing sheep and cattle. Choices about how land is used are made by those who own or control the land, but these choices are limited by the physical and biological characteristics of the land, including its climate, soil and geography. Land use choices are also limited by institutional and economic factors (Barlowe, 1978). Land use may also be formally regulated by land use planning through zoning and planning permission laws, or by private agreements such as restrictive covenants.

Patterns of land use arise naturally in a culture through customs and practices, but land use may also be formally regulated by land use planning through zoning and planning permission laws, or by private agreements such as restrictive covenants. An example, is the setting aside of wilderness either publicly as a “government reserve forest” or privately as a conservation easement.

Within an urban area, a rational pattern of land uses will evolve and this same basic tendency is exhibited in all cities irrespective of their size, origin or geographical location. The apparent haphazard arrangement of land uses in a city belies the underlying essential order. The interplay of economic and non-economic forces helps to determine such factors as the pattern of land uses within an urban area, the changes which will take place and the relative sizes and spacing of different urban areas. The knowledge of this phenomenon is a necessary prerequisite to making the most efficient use of urban land. This study therefore, focuses on the characteristics of land use in residential estates in Lagos with a view to assessing the harmonious and efficient use of the estate lands.

An urban area consists of a great variety of interdependent activities and the choice of location of any activity is normally a rational decision made after an assessment of the relative advantages of various locations for the performance of the activity in question, given the general framework and knowledge prevailing. In the case of a competitive economy, there is a close limit to the disadvantages that can be incurred by any firm or person or, alternatively, the possible advantages that can be forgone. Therefore, in the long run an activity will tend to the location which gives it the greatest relative advantage. This will be the profit-maximisation location for business units and the utility-maximisation one for consumers. Thus, by a process of competition, in any city, large or small, activities seek out and segregate themselves in their area in which their optimum conditions (greatest relative advantage) are to be found and by virtue of which they are normally able to exclude all other users.

## 2. Literature Review

### Classification of Urban Land Use

To classify urban land use will require the grouping of similar uses which could be based on their peculiarities. According to Northam (1979), the main classes of urban land uses, generally acceptable in the field of urban planning are residential (low, medium, and high densities), commercial and central areas, industrial, public (schools, hospitals, police stations, post-office, cemetery, etc.), semi public (churches, mosques, etc.), circulation (roads, railways, walkways, bicycle tracks, etc.) and recreational (park, playground, open spaces, etc.).

Oduwaye (2001) has referred to urban land use as the physical manifestation of socio-economic, cultural, political and environmental forces shaping the use of lands in urban area. Urban land is used variously for different purposes such as residential (low, medium and high densities), commercial (offices, banks, shops), industrial (factories, warehouse), public



(schools, hospital, police, post office, cemetery), semi-public (churches, mosques), circulation (roads, railways, walkways, bicycle tracks) and recreational (park, playground, open space).

In like manner, but much more explicit Agbola and Olatubara (2004) classified urban land uses according to the dominant use in different parts of the urban centre as follows:

- i. Residential land use (including individual property or plots, the access roads or local streets and other relevant facilities): high density, medium density and low density.
- ii. Mixed uses (a combination of permissible complementary uses that generally have little or no negative effect): residential/public land use, residential/commercial land use, public/commercial land use, institutional/commercial land use.
- iii. Commercial land use: Central Business District, District and Neighbourhood Commercial Centre, Markets, Shopping malls, precincts, etc.
- iv. Industrial land use: service, light, medium and heavy industrial areas.
- v. Institutional land use: educational, cultural and health institutions, research and development, libraries, religions, etc.
- vi. Public/governmental land use: secretariats, police, fire service, post offices, community centres, etc.
- vii. Infrastructural land use: transportation, water works, electricity, telecommunication, refuse dumping and disposal areas, sewage collection and treatment areas, etc.
- viii. Public open spaces/reservations: parks and gardens, recreation, urban agricultural lands, buffer zones, squares, streams and river courses, rock outcrops and “unusable” lands (cliffs, etc.).

The classification of urban land uses is not exhaustive both in broad terms and in their sub-divisions. Further groupings and re-arrangements could be done for some of the broad land use types.

The different types of urban land use and its various classifications are very much related to this study. Accordingly, the review of some recent literature on the theme is carried out here. The different classifications of the uses are needed to highlight the relative importance and positions of each of the various land uses in land allocation within a typical urban centre. For instance, an urban residential estate is usually inclusive of some other land uses such as commercial, infrastructure, open spaces and other permissible complementary uses.

### **Review of Empirical Studies**

Ikurekong and Jacob (1998) in their appraisal of Ewet Housing Estate in Uyo developed by Akwa Ibom State Government using secondary source data identified that 60% of the total land area was earmarked for residential accommodation while 40% was allocated to circulation, parks, schools, offices, water works and light. The study also identified two densities of low and medium categories within the estate.

The low density plots have average size of 40 metres x 50 metres while the medium density residential plots have average size of 15 metres x 35 metres. The study showed a deviation of 60% from original plan of the estate to the detriment of other land uses thereby resulting into overcrowding and deficiency in facilities and services provided.

Following the basic hedonic property value model (Freeman, 1993), Rahman and Hardie (2004) studied the impact of subdivision specific amenities on residential property values in Maryland USA. The study attempted to test the hypothesis that subdivision specific amenities significantly affect residential property values. A hedonic pricing model, derived from a dynamic game theoretic setting was employed to test the hypothesis. A linear Box-Cox specification of the hedonic housing pricing model with housing sales price as a function of plot size and other housing attributes were estimated. Different housing attributes were grouped into four subsets: building characteristics, sub-division attributes, location and neighbourhood features, and polity variables. The empirical study showed that variables measuring subdivision specific amenities significantly affect residential housing property values and omission of such variables produces biased coefficient estimates for other measures. The study has demonstrated the significance of both internal and external attributes on residential properties values. The study is however silent on the types of properties and those that provide the investor the maximum return.

Braimoh (2006) studied spatial analysis of residential land use change in Lagos, Nigeria with the objective to characterize residential land development in three regions with different population densities in Lagos. Land use changes were mapped from satellite images while logistic regression was used to model the probability of residential land development as a function of spatially explicit biophysical and social data set. The research found that there was an increase in residential land use from over 18,000 hectares to about 35,000 hectares in the low population density, from more than 17,700 hectares to about 26,000 hectares in the medium population density and from more than 6,600 hectares to about 7,600 hectares in the high population density. Thus, the annual rates of increase in residential land development were 5.6 percent, 2.9 percent and 0.9 percent for low, medium and high population density regions, respectively. This study looks at the social aspect of residential land use with reference to different densities and the implication of housing development to the detriment of agricultural land use in the urban periphery. The paper further argues that if low density sprawl continues, it will most likely increase the cost of infrastructure to link the suburbanized areas to the main city. The study however fails to look into the economic aspect of developing residential lands of various densities to highest and best use. This interface is the core subject of this study.

In an empirical study of urban land use, Aribigbola (2007) examines urban land use planning, policies and management in sub Saharan African countries using Akure, Nigeria as a case study. The research has the objective of determining the effect of land use planning and management on land accessibility. Employing frequency tables, percentages and regression analytic techniques, the study reveals that although land use planning and policies and mechanisms are in place in the city, they are not fully implemented and do not have any significant effect on land accessibility. The study has in no small measure contributed to the body of knowledge in the area of land use planning and management as they affect accessibility to urban land. The specific area of how the accessed land can be continually used without encroachment among different uses is left for further research. This study will therefore take over from that point.

### **3. The Study Area**

Metropolitan Lagos is located within Lagos State in the south-western part of Nigeria. Although, there is no existing universally accepted definition of what constitutes Metropolitan Lagos, the Master Plan Unit of the Ministry of Economic Planning and Land Matters once defined it as “the area stretching from Lagos Island in the south to Agege and Isheri in the

north, Ojo town in the west and Ikorodu town in the east". It is located approximately on latitude 6° 22'N and 6° 52'N and longitude 2° 42'E and 3° 22'E (Odumosu, 1999). Being located at the only natural break along some 2500 km on the West African Coastline, Lagos played a very important part in trading activities in the 18<sup>th</sup> and 19<sup>th</sup> centuries and has grown to play the role of regional centre for the West African Region (Adalemo, 1991).

Metropolitan Lagos consists of 16 urban local governments out of the 20 local government areas in Lagos State (World Bank, 2005; FGN, 2007). They are Apapa, Ajeromi-Ifelodun, Alimoso, Agege, Amuwo-Odofin, Etiosa, Ifako-Ijaiye, Ikeja, Kosofe, Lagos Island, Lagos Mainland, Mushin, Ojo, Somolu and Surulere (figure 1). Lagos population according to the National Population Commission (1991) is 7.511 million. With an annual population growth rate of about 13.6 percent (about 5 times as fast as the national growth rate of 2.8 percent) Lagos is Africa's second fastest growing urban centre after Cairo (Aluko, 1999). The population of Lagos was expected to reach about 11.73 million by the year 2002 but the 2006 National Population Census puts the figure at 9.2million. This figure is, however, being disputed by the Lagos State Government which claimed to have recorded a figure of about 18 million from a parallel census enumeration carried out.

#### **4. Research Method**

The design adopted for this study is descriptive while the sampling methods are purposive and stratified. The lists of estates (sampling frame) are arranged into three strata of low, medium and high densities. In order to include some important estates, one residential estate is chosen from each stratum using purposive sampling method. The purposive sampling method helps to choose the estates that adequately represent all the estates in each stratum. In this wise, the following estates are chosen: Ikeja GRA, (low density); Ajao Estate-Isole, (medium density); and Oyadiran Estate (high density). These estates are chosen due to their unique characteristics in terms of density, geographical location and ownership. The sample size from each of the estates has been determined statistically using Yamane (1967) model of estimating an appropriate sample size of a finite population. Table 1 shows the population and sample size for each estate. Descriptive statistics of frequency distribution, percentage and deviation are employed for the data analyses.

The summary of questionnaire administration is presented on Table 2. It shows the number of questionnaires distributed and returned in each of the estates. The percentage response is computed accordingly. The table shows that a total of 808 questionnaires were administered in the studied estates while 542 were returned and found useful for analysis. The overall percentage response was 67%. This was considered large enough and hence used for the study.

#### **5. Findings and Discussions**

The land use distribution in the studied estates viz: Ikeja GRA, Ajao Estate and Oyadiran Estate were examined considering basically residential allocation, circulation and other uses comprising recreation, schools, shopping, offices and religion. Land use allocations at the proposal level and at the present development were examined to elicit level of compliance. Table 3 presents the situation. The table shows that the total land area of Ikeja GRA is 296.68 hectares, Ajao Estate is 269.90 hectares while Oyadiran Estate is 28.80 hectares. At the proposal level, 60% of the land area in Ikeja GRA was allocated for residential use, 20% for roads, and 20% for other uses. In Ajao Estate, it was 62% for residential, 20% for roads and 18% for other uses. In the case of Oyadiran Estate, it was 65% for residential uses, 18% for roads and 17% for other uses. In general, allocation for residential use is about 60%, a

scenario confirmed by Herbert and Thomas (1982), Oduwaye (2001) Obateru (2005) and Olayiwola et al., (2006).

Roads at proposal level were 20% in Ikeja GRA and Ajao Estate but 18% in Oyadiran Estate. Other uses had 20% in Ikeja GRA, 18% in Ajao Estate and 17% in Oyadiran Estate. The present developments in the estates are no longer the same as could be observed from the table. Residential uses in all the estates have been increased from their initial allocation at proposal level to the detriment of roads and other uses. In Ikeja, Ajao and Oyadiran, there have been percentage increase of 19.5%, 6.4% and 6.8% respectively. Road allocations have decreased by 4.3%, 1.8% and 2.8% in Ikeja, Ajao and Oyadiran. In the same vein, other uses have been depleted by 15.2%, 4.6% and 4% in Ikeja, Ajao and Oyadiran. These findings confirm the work of Ikurekong and Jacob (1998) on Ewet Housing Estate, Uyo where similar results were recorded.

The present situation of land use distribution in the estates where residential land use is encroaching on the other land uses can be attributed to demand for land for residential use. This had led to conversion of open spaces meant for parking and recreation to residential developments. Moreover, many of the large plots of land especially in the low density Ikeja GRA are being sub divided into two or more plots for residential development. Also common in the medium and high density estates of Ajao and Oyadiran is the blocking of paths, driveways and cul-de-sacs for residential developments.

## **6. Conclusion and Recommendation**

The study discovers that land use distribution in the estates at proposal stage for residential, circulation and other uses were in the average proportion of 60%, 20% and 2% respectively. The present situations in the estates are no longer the same. The study found that residential plots have been increased from their original allocation by 19.5%, 6.4% and 6.8% in Ikeja GRA, Ajao Estate and Oyadiran Estate in that order. Conversely, lands meant for roads and other uses have been reduced due to encroachment by residential use. From these findings, it can be concluded that there is a contravention of development proposals for the residential estates in Lagos through encroachment of residential uses on roads, open spaces, green belts and parks. The encroachment is more noticeable in the low density estates where a plot of land is divided into two or three smaller plots. In Ikeja GRA, parcels of land earmarked for open spaces and play ground at proposal level have been built upon. This usually happens when government officials grant 'fake' permit to people to build houses in contravention of laid down rules. Investigations have revealed in earlier works that those who are culpable of this act are members of the ruling political class (Ikurekong and Jacob, 2009 and Babade, 2003). To avoid this continued misuse of the land, the town planning offices and the relevant agencies managing the estates should rise up to their responsibilities in monitoring physical developments in the estates. The managing agencies should be given legal powers derived from the state enabling statutes, which enable them to require that people adhere to policies and plans.

## References

- Agbola, S. B. and Olatubara, C. O. (2004). *Land Use Planning In: Agbola Tunde; Readings in Urban and Regional Planning*. Macmillan. Lagos, Nigeria.
- Aribigbola A. (2007). *Urban Land Use Planning, Policies and Management in Sub-Saharan Africa Countries: Empirical Evidence from Akure, Nigeria. Fourth Urban Research Symposium*.
- Babade, T. (2003). Access to Urban Land in Nigeria: An Analysis of the Activities of Lagos State Land Use and Allocation Committee in Omirin *et al.* eds. *Land Management and Property Tax Reform in Nigeria*. Proceedings of a National Workshop organized by the Department of Estate Management, University of Lagos, Nigeria.
- Barlowe, R. (1978) *Land Resources Economics: The Economics of Real Estate 3<sup>rd</sup> ed.* Prentice-Hall Inc. New Jersey.
- Braimoh, A. K. (2006). *Spatial Analysis of Residential Land Use Change in Lagos, Nigeria. UNU – IAS Working Paper No. 144*
- Environmental Literacy Council (2002) *Land Use*.  
<http://www.enviroliteracy.org/subcategory.php/26.htm>.
- Federal Republic of Nigeria Official Gazette (2007): *Legal Notice on Publication of the Details of the Breakdown of the National and State Provisional Total, 2006 Census* (PDF), Retrieved on 2008-10-29.
- Freeman A.M. (1993). *The Measurement of Environmental and Resource Values: Resource for the Future*, Washington D. C.
- Herbert, D. and Thomas, C. J. (1982) *Urban Geography: A First Approach*. John Wiley and Sons, Chichester.
- IkureKong E. E. and Jacob A. (1998). *Public Housing and Environmental Quality: Perspectives on Housing Estate Development in Uyo, Akwa Ibom State. Effective Housing In the 21<sup>st</sup> Century, Nigeria ( ), 123 – 129.*
- Obateru, O.I. (2005) *Controlling Residential Densities*. Penthouse publications (Nig.), Ibadan.
- Oduwaiye, A. O. (2001). *Residential Land Use and Land Values in Metropolitan Lagos*. Unpublished Ph.D. thesis, Urban and Regional Planning Dept. Obafemi Awolowo University, Ile-Ife.
- Olayiwola, L. M.; Adeleye, O. and Oduwaye, A. (2006) *Spatial Variation in Residential Land Value Determinants in Lagos Nigeria*. Paper presented at the 5<sup>th</sup> FIG Regional Conference, Accra, Ghana. March 8 – 11.

Yamane T. (1967) *Statistics: An Introductory Analysis*, 2<sup>nd</sup> ed., Harper and Row, New York.

**Table 1: Population and Sample Size for Each of the Estates**

<u>Estate</u>	<u>Population</u>	<u>Sample</u>
Ikeja GRA	723	258
Ajao Estate	1942	335
Oyadiran Estate	451	215
<b>Total</b>	<b>3116</b>	<b>808</b>

Source: Field Survey, 2012.

**Table 2: Questionnaire Distributed To Respondents**

<u>Estates</u>	<u>Questionnaire Administered</u>	<u>Questionnaire Returned</u>	<u>Percentage Response</u>
Ikeja GRA	258	155	60
Ajao Estate	335	228	68
Oyadiran Estate	215	159	74
<b>Total</b>	<b>808</b>	<b>542</b>	<b>67</b>

Source: Author's research design, 2012.

**Table 3: Land Use Distribution in Ikeja G.R.A, Ajao Estate and Oyadiran Estate**

<u>Proposal level</u>		<u>Present Development</u>			<u>% Deviation</u>				
<u>Land Use</u>	<u>Area (ha)</u>	<u>Area (ha)</u>							
	<u>Ikeja</u>	<u>Ajao</u>	<u>Oyadiran</u>	<u>Ikeja GRA</u>	<u>Ajao</u>	<u>Oyadiran</u>	<u>Ikeja GRA</u>	<u>Ajao Est.</u>	<u>Oyadiran Est.</u>
Residentialia	178.00 (60)	167.15 (62)	18.72 (65)	235.86 (79.5)	184.40 (68.4)	20.68 (71.8)	19.5	6.4	6.8
Roads	59.34 (20)	53.92 (20)	5.18 (18)	46.58 (15.7)	49.07 (18.2)	4.38 (15.2)	-4.3	-1.8	-2.8
Other Uses	59.34 (20)	48.53 (18)	4.90 (17)	14.24 (4.8)	36.13 (13.4)	3.74 (13.0)	-15.2	-4.6	-4.0
<b>Total</b>	<b>296.68 (100)</b>	<b>269.60 (100)</b>	<b>28.80 (100)</b>	<b>296.68 (100)</b>	<b>269.60 (100)</b>	<b>28.80 (100)</b>	<b>0</b>	<b>0</b>	<b>0</b>

Note: Percentage of total in parenthesis.

Source: Author's Field Work, 2012.



Source: Wikipedia Internet Encyclopaedia – Lagos State Page -[www.wikipedia.com](http://www.wikipedia.com)

**Fig.1: The Lagos Metropolis**

# *Determination of active ingredient and dissolution of common brands of paracetamol tablets using classical and instrumental analytical methods.*

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## **Abstract**

Commonly available brands of paracetamol were evaluated for their active component. Thirteen different brands of paracetamol tablets were procured over the counter from pharmacies in Lagos, Nigeria. The paracetamol brands were analysed for the active ingredient and the dissolution characteristics using standardised analytical procedures, viz: titrimetry, uv/visble spectrophotometry and high performance liquid chromatography. The results of analysis by the three different methods showed that all thirteen brands complied with pharmacopeia standards, in that the acetaminophen content per tablet falls within the standard acceptable range (95% - 105% as per British pharmacopeia). Statistical analyses of acetaminophen content of the three different analytical methods using paired t-test and analysis of variance at ( $p = 0.05$ ) indicate no significant difference between the sensitivities of procedures. Tablet dissolution test conducted for each brand also complied with pharmacopeia standard (British Pharmacopeia) of not less than 70% of paracetamol content per tablet dissolving within 45 minutes. The analyses conducted on the thirteen paracetamol brands showed pharmacopeia compliance by all brands tested using the three different standard analytical procedures.

**Keywords:** Paracetamol, dissolution; titrimetry; uv/visble spectrophotometry, high performance liquid chromatography



## Introduction

Paracetamol also known as acetaminophen, is a widely used over-the-counter analgesic (pain reliever) and antipyretic (fever reducer) (Moore 2007) (Walsh, Edwards, & Fraser, 2007) (Scottish Intercollegiate Guidelines Network 2008) (N´emeth, Jankovics, N´emeth-Palot´as, & Koszegi- Szalai, 2008) (Afkhani, Sarlak, & Zarei, 2006). It is commonly used for the relief of headaches and other minor aches and pains, and is a major component in numerous cold and flu remedies. In combination with opioid analgesics, paracetamol can also be used in the management of more severe pains such as post-surgical pain, and providing palliative care in advanced cancer patients (Scottish Intercollegiate Guidelines Network 2008). It is available in different dosage forms: tablet, capsules, drops, elixirs, suspensions and suppositories (Sweetman & Martindale, 2005). Consequent upon its efficacy and widespread over the counter availability, the usage of paracetamol is a subject of abuse and/or misuse.

Subsequent to oral administration and absorption from the gastrointestinal tract, paracetamol diffuses into the blood, is distributed throughout the body and metabolised in the liver (Koling, Hempel, Lanvers, Boos, & Wurthwein, 2007). The onset of analgesia is approximately 11 minutes post oral administration of Paracetamol (Moller, Sindet-Pedersen, Petersen, Juhl, & Dillenschneider, 2005), and its half-life is 1-4 hours. Though acetaminophen is used to treat inflammatory pain, it is not generally classified as a Non-Steroidal Anti Inflammatory Drugs (NSAID), because it exhibits only weak anti-inflammatory activity. In recommended doses, paracetamol (1,000 mg per single dose and up to 4,000 mg per day for adults) is safe, and it is not considered carcinogenic at therapeutic doses (Bergman, Müller, & Teigen, 1996). Acute overdoses of paracetamol can cause potentially fatal liver damage, and in rare individuals, a normal dose can do the same; the risk is heightened by alcohol consumption. Paracetamol toxicity is the foremost cause of acute liver failure in the Western world, and accounts for most drug overdoses in the United States, the United Kingdom, Australia and New Zealand (Larson, Polson, Fontana, Davern, & Lalani, 2005) (Hawkins, Edwards, & Dargan, 2007) (Khashab, Tector, & Kwo, 2007) (Daly, Fountain, Murray, Graudins, & Buckley, 2008). The words acetaminophen (used in the United States, Canada, Japan, South Korea, Hong Kong, and Iran (Bradley, 1996) and Paracetamol (used elsewhere) both come from a chemical name for the compound: para-acetylamino-phenol and para-acetylamino-phenol. In some contexts, it is simply abbreviated as APAP, for acetyl-para-aminophenol.

Numerous methods for Paracetamol determination have been described in literature, including chromatography (RP - HPLC)(Carnevale, 1983),(Sa'sa & Rashid, 1984),(Suzen et al., 1998) (Joshi & Sharma, 2008) , chemometric-assisted spectrophotometric (Wafaa, 2008), spectroscopy (Garg, Saraf , & Saraf, 2007), (Karla, Naik, Jurnal, & Mishra, 2009),(Narayan, Kumar, Sindhu, Tiwari, & Ghosh, 2009), spectrophotometry (Bouhsain, Garrigues, Morales-Rubio, & Guardia, 1996), titrimetry (Kumar & Letha, 1997) and electrochemistry(Altricia et al., 1994) Altria, 1994. In the standard method, paracetamol is determined titrimetrically with Ce (IV) in acidic medium, using ferroin as indicator. The titration is performed in cold conditions.

This work deals with the comparison of classical (titrimetry) and instrumental methods (spectrophotometry and high performance liquid chromatography) in the determination of paracetamol content in readily available paracetamol brands of tablet in pharmacy stores sold in Lagos, Nigeria and to determine compliance with regulatory standards.

## Materials and Methods

Thirteen brands of 500 mg/tablet paracetamol samples were purchased from various pharmacy stores located in Lagos metropolis. Table 1 shows the various brands of paracetamol studied. Twenty tablets of each of the brands of paracetamol were weighed and the average weight determined. The weighed tablets were crushed together to obtain a fine powder.

A comparative analysis was done to find significant differences among the mean values obtained using the three techniques. The least significant difference test was employed to determine differences among means at a  $p = 0.05$  significance level.

### Titrimetric method:

An accurate quantity of the powder tablet equivalent to 250 mg of the paracetamol was weighed and dissolved in a mixture of 10 ml of distilled water and 30 ml of 2.0 M sulphuric acid. This mixture was refluxed for 60 minutes, cooled and 50 ml of water added. This was then cooled in an ice bath and 15 ml of 2.0 M hydrochloric acid added and titrated with 0.1 M ceric ammonium sulphate VS using ferroin sulphate solution as indicator. Each ml of 0.1 M ceric ammonium sulphate VS is equivalent to 0.00756 g of paracetamol. This procedure was carried out for each of the paracetamol brands.

### UV spectrophotometric method:

Standard solution of 0.15g of paracetamol reference standard was weighed and transferred into a 200 mL volumetric flask. 50 mL of 0.1 M sodium hydroxide solution was added and diluted with 100 mL of distilled water. The mixture was sonicated for 15 minutes to complete dissolution, and the volume made up to mark with distilled water. The resulting solution was then filtered using whatman filter paper no. 41.

Sample Solution: A mass of the powdered tablets equivalent to 0.15 g of paracetamol was taken and subjected to the same treatment as in the standard preparation above.

10 mL of the filtrates of both sample and standard solutions was pipetted into separate 100 mL volumetric flasks and diluted to mark with distilled water. Another 10 mL of the resulting solutions of both standard and sample was pipetted into another set of 100 mL volumetric flasks and 10 mL of 0.1 M sodium hydroxide solution added to each and then diluted to mark with distilled water. The absorbance of both solutions at the maximum at 271 nm was taken using UV/Visible Genesys spectrophotometer. A solution made up of 10 mL of 0.1 M sodium hydroxide solution and 90 mL of distilled water was used as blank.

The content of paracetamol was determined using the standard and A (1%, 1cm) value of 715 at the maximum at 271 nm (British Pharmacopoeia, 2007)).

Immediately after one minute the absorbance was measured at 420 nm wavelength using double beam uv/visible cecil 3025

### HPLC Method

**Mobile phase preparation:** Methanol and phosphate buffer pH 5.0 are mixed in the ratio (3:7)

**Standard preparation:** 50 mg of paracetamol reference standard was weighed and carefully transferred into a 50 mL volumetric flask. About 20 mL of the mobile phase was added and sonicated for 20 minutes to dissolve. The volume was then made to mark with the mobile phase. 1.0 mL was pipetted from this solution into a 20 mL volumetric flask and diluted to mark with the mobile phase.

**Sample Preparation:** A weight equivalent to 50 mg of paracetamol was taken from the powdered tablets and subjected to the same treatment as above for the standard.

Waters 2695/2487 model of HPLC was used.

Chromatographic Condition:

Column: Symmetry G8 5 micrometer 250 mm X 4.60 mm

Flow rate: 1.0 ml/minute

Detector: 243 nm

Injection volume: 20 micro litre (British Pharmacopoeia, 2007)

### Dissolution Test

**Phosphate Buffer pH 5.5:** 13.61g of potassium dihydrogen phosphate was dissolved in 1000ml of distilled water. 35.81g of disodium hydrogen phosphate was dissolved also in 1000ml of distilled water. Mix 96.4 ml of the dihydrogen solution with 3.6 ml of the disodium solution was mixed to form the buffer solution.

**Procedure:** 900 ml of phosphate buffer pH5.5 was transferred into the chambers of the dissolution apparatus II of Electrolab model and four tablets of paracetamol from each of the brands were dropped, one each in each of the four chambers of the apparatus. The temperature was set at 37°C and rotation set at 50 revolutions per minute for 45 minutes. After 45 minutes, 20 ml of the medium was withdrawn and filtered.

1.0 ml of the filtrate was then diluted to 40 ml with 0.1M sodium hydroxide solution. The absorbance of this solution was then taken at the maximum at 257 nm using 0.1M sodium hydroxide solution as blank. The total content of paracetamol taken into solution after 45 minutes in the medium was calculated taking 715 as the value of A (1%, 1 cm) at the maximum at 257 nm (British Pharmacopoeia, 2007).

### Results and Discussion

Table 2.0 shows the result of analyses of the different brands of paracetamol using the three different methods (Titrimetry, UV Spectrophotometry and HPLC). From the results, it is observed that the paracetamol content per tablet for all the brands complied with British pharmacopoeia standard (475mg – 525mg) of paracetamol per tablet i.e. (95% - 105%) of paracetamol per tablet. The paracetamol content in BPS7 returned the highest mean value of paracetamol content in all three methods: titrimetry, uv spectrophotometer and HPLC (501.18mg/tab, 500.82mg/tab and 501.18mg/tab respectively) while BPS13 returned the lowest mean paracetamol content in all three methods (495.66mg/tab, 495.10mg/tab, 495.50 and 495.42mg/tab respectively). Though the claim by the manufacturers is 500 mg/tablet, all the brands that returned values less than 500mg are still within the BP specification. Analysis of variance at 95% confidence level showed no significant difference between the three methods. Pair *t*-test at ( $p = 0.050$ ) showed no significant difference between the titrimetry and UV Spectrophotometer method; titrimetry and HPLC method; UV Spectrophotometer method and HPLC method.

Table 3.0 shows the mean results of dissolution tests conducted for each of the brands of paracetamol. According to British pharmacopoeia, the standard for dissolution test is: not less than 70% of the declared content of the active ingredient must be dissolved after 45 minutes of commencement of the test. Hence as observed from the table, all the brands pass the test, with samples BPS2, BPS6 and BPS7 having the highest concentration of paracetamol dissolved in the medium within 45 minutes, while BPS8 gave the lowest, but still within the

British pharmacopoeia specifications. The result obtained showed the conformity of the samples with the specifications.

### **Conclusion**

Thirteen brands of paracetamol tablets have been subjected to analysis using three different methods of analysis (Titrimetry, UV Spectrophotometry and HPLC). The results indicated that all brands conform to the BP specification of 475-525 mg/tablet paracetamol content. Statistical analysis (ANOVA) showed that there was no significant difference between the three methods.

### **Acknowledgement**

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## References

- Afkhami, A., Sarlak, N., & Zarei, A. R. (2006). Spectrophotometric determination of salicylamide and paracetamol in biological samples and pharmaceutical formulations by a differential kinetic method. *Acta Chimica Slovenica*, 53(3), 357- 362.
- Altricia, K. D., Claytonil, N. G., Hart, M., Harden, R. C., Hevizi, J., Makwana, J. V., & Portsmouth, M. J. (1994). An inter-company cross-validation exercise on capillary electrophoresis testing of dose uniformity of paracetamol content in formulations. *Chromatographia*, 39, 180-184.
- Bergman, K., Müller, L., & Teigen, S. W. (1996). Series: current issues in mutagenesis and carcinogenesis, No. 65. The genotoxicity and carcinogenicity of paracetamol: a regulatory review. *Mutat Res*, 349, 263-288.
- Bouhsain, Z., Garrigues, S., Morales-Rubio, A., & Guardia, M. (1996). Flow injection spectrophotometric determination of paracetamol in pharmaceuticals by means of on-line microwave assisted hydrolysis and reaction with 8-hydroxyquinoline. *Anal. Chim. Acta*, 33, 59-69.
- Bradley, N. (1996). Naming of drugs. BMJ should use “paracetamol” instead of “acetaminophen” in its index. *BMJ*, 313 689.
- British Pharmacopoeia. (2007) (pp. 2814 - 2815). London: HM Stationary Office.
- Carnevale, L. (1983). Simultaneous determination of acetaminophen, guaifenesin, pseudoephedrine, pholcodine and paraben preservatives in cough mixture by high performance liquid chromatography. *J. Pharma. Sci*, 72 196-198.
- Daly, F. F., Fountain, J. S., Murray, L., Graudins, A., & Buckley, N. A. (2008). Guidelines for the management of paracetamol poisoning in Australia and New Zealand: explanation and elaboration. A consensus statement from clinical toxicologists consulting to the Australasian poisons information centres. *Med J Aust*, 188, 296-301.
- Garg, G., Saraf, S., & Saraf, S. (2007). Simultaneous estimation of aceclofenac, paracetamol and chlorzoxazone in Tablets. *Indian J. Pharm. Sci*, 69(5), 692-694.
- Hawkins, L. C., Edwards, J. N., & Dargan, P. I. (2007). Impact of restricting paracetamol pack sizes on paracetamol poisoning in the United Kingdom: a review of the literature. *Drug Saf*, 30, 465-479.
- Joshi, R., & Sharma, R. (2008). Development and validation of RP-HPLC method for simultaneous estimation of three-component tablet formulation containing acetaminophen, chlorzoxazone and aceclofenac. *Anal. Lett*, 41(18), 3297-3308.
- Karla, K., Naik, S., Jurmal, G., & Mishra, N. (2009). Spectrophotometric method for simultaneous estimation of Paracetamol and Domperidone in tablet formulation. *Asian J. Research Chem*, 2(2), 112 - 115.

- Khashab, M., Tector, A. J., & Kwo, P. Y. (2007). Epidemiology of acute liver failure. *Curr Gastroenterol Rep*, 9, 66-73.
- Koling, S., Hempel, G., Lanvers, C., Boos, J., & Wurthwein, G. (2007). Monitoring paracetamol metabolism after single and repeated administration in pediatric patients with neoplastic diseases. *International Journal of Clinical Pharmacology and Therapeutics*, 45, 496-503.
- Kumar, K. G., & Letha, R. (1997). Determination of paracetamol in pure form and in dosage forms using N,N-dibromodimethylhydantoin. *J. Pharm. Biomed. Anal*, 15, 1725-1728.
- Larson, A. M., Polson, J., Fontana, R. J., Davern, T. J., & Lalani, E. (2005). Acetaminophen-induced acute liver failure: results of a United States multicenter, prospective study. *Hepatology*, 42, 1364-1372.
- Moller, P., Sindet-Pedersen, S., Petersen, C. T., Juhl, G. I., Dillenschneider, A. & Skoglund, L. A (2005). Onset of acetaminophen analgesia: comparison of oral and intravenous routes after third molar surgery. *Br J Anaesth*, 94, 642-648.
- Moore, N. (2007). Ibuprofen: a journey from prescription to over-the-counter use. *Journal of the Royal Society of Medicine*, 100, 2-6.
- Németh, T., Jankovics, P., Németh-Palotás, J., & Koszegi-Szalai, H. (2008). Determination of paracetamol and its main impurity 4-aminophenol in analgesic preparations by micellar electrokinetic chromatography. *Journal of Pharmaceutical and Biomedical Analysis*, 47(4-5), 746-749.
- Narayan, S., Kumar, P., Sindhu, R., Tiwari, A., & Ghosh, M. (2009). Simultaneous analysis of paracetamol and tramadol - Analytical method development and validation. *Der Pharma Chemica*, 1(2), 72-78.
- Sa'sa, S., & Rashid, A. (1984). Simultaneous determination of acetaminophen and dextropropoxyphene napsylate in pharmaceutical preparations by reverse phase HPLC. *Talanta*, 31, 397-399.
- Scottish Intercollegiate Guidelines Network (2008). A national clinical guideline *Control of pain in adults with cancer*. Scotland: National Health Service (NHS).
- Suzen, S., Akay, C., Tartilumis, S., Erdol, S. R., Onal, A., & Cevherogulu, S. (1998). Quantitation of acetaminophen in pharmaceutical formulations using reversed phase HPLC. *J. Fac. Pharm. Ankara*, 27(2), 93-100.
- Sweetman, S. C., & Martindale (Eds.). (2005). *The complete drug reference* (Vol. 34th ed). London: Pharmaceutical Press.

Wafaa, S. (2008). Determination of ibuprofen and paracetamol in binary mixture using chemometric assisted spectrophotometric methods. *Am. J. Applied Sci*, 5(8), 1005 - 1012.

Walsh, A., Edwards, H., & Fraser, J. (2007). Over-the-counter medication use for childhood fever: a cross-sectional study of Australian parents. *Journal of Paediatrics and Child Health*, 43, 601-606.

Table 1: The various brands of paracetamol studied

Sample code	Batch Number	Manufacturing Date	Expiry Date	NAFDAC Number
BPS1	5598P	12/2010	12/2015	04-0411
BPS2	1024	07/2011	06/2014	04-0101
BPS3	F11511	05/2011	05/2916	04-1217
BPS4	TA34564	85/2011	04/2014	04-6362
BPS5	10113711	06/2011	05/2014	04-2238
BPS6	MA1196	04/2011	03/2014	04-0633
BPS7	016S	03/2011	03/2014	04-0205
BPS8	PT0093	01/2010	12/2012	04-0975
BPS9	RGB-1122	02/2011	01/2014	04-3801
BPS10	P391	05/2011	04/2014	04-1853
BPS11	TZ07R	04/2011	03/2014	04-4708
BPS12	JC87	05/2011	04/2014	A4-0211
BPS13	PT095	02/2010	05/2013	A4-0946

NAFDAC- National Administration for food and drug agency control

Table 2.0 Mean of brands of paracetamol content (mg/tablet) using various methods

Sample code	Titrimetry	UV/Visible Spec.	HPLC
BPS1	499	498	499
BPS2	500	501	500
BPS3	500	500	500
BPS4	500	500	500
BPS5	497	497	497
BPS6	498	499	499
BPS7	501	501	50
BPS8	497	497	497
BPS9	496	495	496
BPS10	496	496	496
BPS11	499	498	499
BPS12	497	497	497
BPS13	496	495	496

Table 3.0: Dissolution mean test of the brands of paracetamol tablets analysed

Samp le	BPS 1	BPS 2	BPS 3	BPS 4	BPS 5	BPS 6	BPS 7	BPS 8	BPS 9	BPS 10	BPS 11	BPS 12	BPS 13
Mean	91.6	92.8	91.5	92.2	89.5	92.7	92.6	86.6	90.6	89.9	91.1	90.0	87.4
±SD	±0.1	±0.3	±0.1	±0.1	±0.1	±0.1	±0.0	±0.1	±0.0	±0.3	±0.0	±0.0	±0.0

# *Determining the Ideas and Thoughts of Language Teachers about the Impact of Cultural Based Activities in Foreign Language Teaching*

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## **Abstract**

This Study is dedicated to find out the ideas and thoughts of teachers about the influence of cultural based activities in foreign language teaching through conducting number of lessons, giving them some questionnaires and surveys pre- and post-experiment in Language School at Süleyman Demirel University. We have tried to figure out the attitudes of teachers towards teaching/learning foreign language through cultural based activities and the influence of them on developing communicative and linguistic competence. Among them were used: games, role plays, video and authentic materials that can help and encourage students to sustain their interest and work. Through practicing various cultural based tasks students explored communicative skills. The tasks conducted both for the teacher and students insights into how cultural based activities can be used not only to develop students' confidence and language skills but also to expand their sense of awareness of intercultural concerns in L2.

**Key Words:** Intercultural Communicative Competence, attitudes, cultural based activities, assessment, lingua-culture, socio-culture.



## 1. Introduction

That culture and language are inseparable notions has been stated by numerous prominent scholars such as Wittgenstein (1980), Saussure (1966), Foucault (1994), Dilthey (1989), Von Humboldt (1876), Adorn (1993), Davidson (1999), Quine (1980) and Chomsky (1968). These are the names to remember when the issue is the relationship between language and culture from different points of views regarding language, human, mind and culture. The most well-known linguists dealing with the issue of language and culture are Sapir (1962) and Whorf (1956). In addition to the previous ones, the following researchers such as Laura (3), Kunanbayeva (1995), Jenkins (2008), Leveridge and Thanasoulas (2009) have also made precise contribution to this subject.

For a long time it has been argued that teaching a foreign language through lingua-cultural approach should be given the importance it deserves. Therefore, many scholars have paid plenty of attention to developing the notion '*intercultural communicative competence*' and contribute ideas to the use of cultural based activities in foreign language teaching. People, involved in language education, have begun to understand the intertwined relation between culture and language with the works of scholars such as Byram (1989; 1994a; 1994b; 1997a; 1997b) and Kramsch (1988; 1993; 1996; 2001). It is emphasized that without the use of cultural based tasks and activities, teaching a foreign language is inaccurate and incomplete. Learning a foreign language means a lot more than acquiring just grammatical structure and vocabulary of it. According to Bada (2000: 101), '*the need for cultural literacy in ELT arises mainly from the fact that most language learners, not exposed to cultural elements of the society in question, seem to encounter significant hardship in communicating meaning to native speakers.*'

When we turn to the relationship between culture and language, we see some remarkable comments; to supply a satisfactory reply to the question of why applying culture should be involved in language teaching. Kitao (2000) giving reference to several authors lists some of the benefits of teaching culture as follows:

- Studying culture gives students a reason to study the target language and can be a good motivational tool.
- One of the major problems in language teaching is to enable students think in the language they learn.
- Providing access into cultural aspect of language, learning culture would help learners relate the abstract sounds and forms of a language to real people and places (Chastain, 1971).
- The role of motivation in ELT was proved by experts like Gardner and Lambert (1959, 1965, and 1972). In achieving high motivation, culture classes do have a great role because learners like cultural based activities such as singing, dancing, role playing, discussing about and doing research on countries and peoples, etc.
- The use of cultural based activities in language education increases learners' not only curiosity about and interest in target countries but also their motivation.

Beside these benefits, studying culture gives learners a liking for the native speakers of the target language. 'Studying culture, we could also learn about the geography, history, etc., of the target culture (Cooke, 1970). McKay (2003) contends that culture influences language teaching in two ways: linguistic and pedagogical. Linguistically, it affects the semantic, pragmatic, and discourse levels of the language. Pedagogically, it influences the choice of the

language materials because cultural content of the language and the cultural basis of the teaching methodology are to be taken into consideration while deciding upon the language materials.

## 2. Problem Statement

The process and result of teaching a foreign language are affected by various factors such as approaches, methods, techniques, teachers, learners, motivation, environment, etc. However, we think it is given a poor consideration. Bearing in mind that ‘*cultural competence*’ is an integral part of ‘*communicative competence*’ or vice-versa; teachers should create an atmosphere of a real English speaking society or environment through the use of lingua-cultural aspects. As Kramsch says: ‘*in class, culture is created and enacted through the dialogue between teacher and students, Through their dialogue, participants not only replicate a given context of culture, but because it takes place in a foreign language, it also has the potential of shaping a new culture.*’ (1993, p. 49). The main problem in foreign language education is that the educators cannot enable L2 students to use target language effectively and appropriately for intercultural communication. In this paper we would like to focus on how culture is viewed teachers and also how the application of the cultural based activities influences the result of foreign language teaching/learning. So, the problem and aim of our investigation can be stated as follows:

What are the attitudes of teachers towards using culture in English classes?

## 3. Methodology

### 3.1 The purpose of the research

The cultural content existing in language teaching has been discussed a lot. However, as far as we see these cultural content or cultural based activities have not been designed in course books enough and put into practice fully in foreign language teaching. So, the main purpose of this study is to find out the attitudes of teachers to using cultural based activities and tasks in classroom.

### 3.2 The Universe and the Sample

This research took place in the spring term in 2012 at Süleyman Demirel University in Preparatory Course of Language School. The Preparatory Course at SDU is settled as follows: The language course lessons are divided into four subjects such as ‘*Main Course*’, ‘*Listening & Speaking*’, ‘*Reading & Writing*’ and ‘*Grammar*’. Emphasis is on developing the four integrated language skills. Teachers develop students’ accuracy, oral fluency and language appropriateness by practicing the language in real-life contexts.

### 3.3 Data Collection and analysis

This chapter aims to present the design, subjects, data collection procedure and data collection instruments of the study and data analysis. We have tried to make a both quantitative and qualitative research by literary review and collection of data from questionnaires given to the teachers pre- and post-experiment.

The data was obtained;

- (a) Before and after the project the teachers, participated the experiment, all have been given a questionnaire aimed at:
  - To understand general attitudes and habits of teachers towards collaborative works and activities in language education.

- To get feedback how teachers liked the use of cultural based activities in language education system.
- To get feedback on how teachers have benefited from these activities.
- To get feedback how teachers got affected by cultural based activities.
- To find out how open the teachers were to, concerned with and what their attitudes were towards the use of culture of target language and whether they have some fears or doubts that teaching a foreign language through cultural based activities is a kind of cultural imperialism and assimilation.
- To figure out how our teachers assess the cultural based activities and exercises, given post-experiment.

The **teacher** questionnaire was made up of open ended questions related to foreign language teaching ways by using cultural based activities and after they had been again interviewed about their opinion on using cultural tasks and activities in foreign language teaching. These questionnaires research the answers to the question whether cultural-based exercises and activities have a positive impact on attitudes of teachers and foreign language teaching process and also results.

#### 4 Findings and discussion

As it has been mentioned before throughout two and half months we have had four groups; two experimental and two control groups. Considering the fact that developing ‘*communicative competence*’ for ‘*intercultural interaction*’ has become the major aim in teaching L2 process, we tried to organize communicative activities that have culture in, most of which have been put into practice in the form of warm ups, discussions, speeches, dialogues, role plays and so on. According to the results, almost every respondent agrees that the use of cultural based activities affect the learning process in positive way. During the experiment it has been mentioned by the teachers that cultural-based exercises and activities stimulate students to interact with each other, use the language tasks more efficiently.

As a result of the pre-experiment survey, the teachers admitted that they come across with tasks connected to different cultural aspects not very often and they understand the importance of use of culture in language teaching. Through using the knowledge of culture of target language, they think that the students learn how to survive in different life situations and behave properly. Beside this, just a few number of the participant teachers had some doubts and fears like, it is a kind of assimilation, cultural imperialism, whether necessary or not and so on. In sum, we came to conclusion that most of the teachers are aware of different cultures but still they should be trained.

#	Questions	Responses	Percentage %
1	How important do you think is the use of culture in ELT?	Important	12 (% 86)
		Not important	2 (% 14)
2	To which skill did the course contribute the most? Could you please rank them from most to the least?	speaking	14 (% 100)
		listening	12 (% 86)
		reading	6 (% 42)
		writing	3 (% 21)
3	What is your aim of using culture in ELT?	Awaken interest	11 (% 78)
		Develop speaking skills	12 (% 86)

		Enable them to learn language through culture	8 (% 57)
		To minimize stress and anxiety	9 (% 64)
4	How often do you use cultural based activities or games in ELT?	Often	10 (% 71)
		Not often	4 (% 29)
5	What kinds of activities do you think are more applicable to conduct culturally based lessons?	Dialogues	12 (% 86)
		Making presentations	11 (% 78)
		Singing songs and watching films	10 (% 71)
		Group work activities	13 (% 92)
		Simulations	9 (% 64)
		Role plays	10 (% 71)

We began the questionnaire asking how important they think using culture in teaching a foreign language is. Most of the 12 of 14 (86%) teachers gave positive answers to this item, which suggested that although using culture was not the major objective of the course, it influenced all four skills positively.

Regarding the skill improved most, the teacher participants expressed views suggesting that speaking skill of students was significantly improved. Since the course was mainly speaking based, the participants spent a lot of time conducting speaking activities through different dialogues, role plays, presentations and others. The teachers added that under the impact of interesting tasks the students tried to speak even with mistakes. As a result they learnt some new vocabulary and after a while they automatically used them in speech.

Having a look at the answers given to the third and fourth questions above we can see that the majority of teachers do use the culture as one of the motivational tools not only to develop communicative competence but also as one of the effective ways to make students learn target language. They strongly believe that using culture as a way of teaching a foreign language awakens interest of students towards the target language; similarly, eliminates stress and anxiety of students.

According to the results of the survey mentioned before the use of culture is used first to develop communicative competence therefore the activities listed and ranked according to the teachers' answers in the table above are those which teachers mostly benefited from. Relying on the answers of teachers we also organized these activities being one of the most applicable and more useful ways to develop language teaching exercises.

- (b) The following questions were open ended where teachers expressed their ideas on how they liked to teach the language through culture and how well those activities helped their students master the language. Most of them gave positive answers about the activities implemented in their class. *'In your opinion, how did the cultural based activities improve your students' English?'* was the first open question. The great majority of teachers stated that the speaking ability develop through the cultural based activities. They said that a student usually was never active until he/she was involved in an interesting task where they face any kind of everyday life situation, they also added that activities provided enjoyable and comfortable atmosphere. *Second* question was *'Can you name the most interesting cultural based activity you have ever done/involved?'* The answers to this question showed that their students were all interested in finding out the family relationships of Kazakh, Russian, Turkish and English nations. Most of the teachers mentioned that their students liked the way that Kazakh and Turkish family member names are more than the family names in English culture and as well it was interesting for

them to know how do Russian or English people call those family relations. The teachers here added that it made them learn more words connected to family members in all for languages. Finally, the *third* question to be answered was: ‘*What other tasks or activities can you add to develop communicative skills?*’ Here the answers given proved that teaching a foreign language by applying cultural based activities can be manifold and occur in different ways, not only in class but also at home watching some films, presentations, videos, singing songs, practicing tongue twisters and so on. They mentioned that if the teachers select the right activity for each tasks and unit of the book it will be more beneficial.

The progress, the teachers have emphasized, can be noticed not only from the grades of written exams but overall participation throughout the lesson and willingness to do better. So, we can admit that the use of culture in ELT has a great motivational effect. However, the second group students didn't show such overwhelming results. By this fact we once again saw evidence that culture should be included in the language teaching curriculum.

(c) The results inferred from the answers of the teachers of the post-experiment.

The purpose of the questionnaire was to find out the attitudes and impressions of teachers towards cultural-based (*lingua-cultural and socio-cultural*) communicative exercises and activities especially after the experiment. We asked six questions to be able to measure and understand to what extent their foreign language teaching believes and thoughts have been affected, how they liked cultural based activities and exercises in language teaching/learning process. The teachers were asked to evaluate the statements about the mentioned activities by the scale from 1 to 5 (1-strong disagreement, 5- strong agreement). The statements were as following:

**Table 2. Number and percentages of the teachers evaluated the cultural based activities**

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Students find involving cultural based communicative activities interesting.	0 (% 0.00)	1 (% 7)	2 (% 14)	7 (% 50)	4 (% 28.5)
Group projects, group discussions and collaborative cultural based activities and tasks are enjoyable for students	0 (% 0.00)	0 (% 0.00)	1 (% 7)	10 (% 71)	3 (% 21)
Cultural based communicative activities and tasks improve their students’ English.	0 (% 0.00)	0 (% 0.00)	2 (% 14)	9 (% 64)	3 (% 21)
Their students feel anxiety or stress in cultural based communicative activities and tasks.	2 (% 14)	8 (% 57)	2 (% 14)	2 (% 14)	0 (% 0.00)
Students find watching extracts about home and host cultures interesting.	0 (% 0.00)	1 (% 7)	1 (% 7)	7 (% 50)	5 (% 35)
There should be extra and additional cultural based communicative activities to the lessons.	0 (% 0.00)	0 (% 0.00)	2 (% 7.31)	8 (% 57)	4 (% 28.5)

Concluding from the table 2, the great majority of the teachers strongly and normally agree (% 78.5) and find cultural based communicative activities, collaborative cultural based activities and tasks (% 92) and watching extracts about home and host cultures are interesting and enjoyable. Most of them (% 85) believe that these kinds of activities and tasks improve their students’ English. Just 2 teachers (% 14) stated that their students feel anxiety or stress

during cultural based communicative activities and tasks. A big number of teachers (% 86) agreed that there should be extra and additional cultural based communicative activities to the lessons.

## **5 Conclusions and implications for education**

This study has checked and investigated the attitudes of teachers towards using cultural based activities and the overall impact of it on ELT. In general teachers think that teaching and learning a foreign language through culture-based activities is one of the most effective and interesting ways for presenting, practicing and improving the learner's communicative competence.

Cultural based activities contribute a lot in learning a foreign language if learners are given chance to practice the target language through its culture in a pleasant and friendly warm atmosphere. The role of cultural based activities in teaching a foreign language, in our case English, cannot be ignored because every cultural activity has shown plenty of advantages and effectiveness in ELT in many different ways. First of all, cultural activities bring a kind of fruitful atmosphere where students learn four skills through sharing information, discussing and interacting with each other. Secondly, cultural based activities involve learners in the task-based activities where the goal is to set and students do their best in order to compete with each other. The last but not the least: the main factor of using socio-cultural activities is that they bring real world context into the classroom, and enhance students' use of English in a flexible and communicative way. The main results of this research have implications for learners and teachers in the realm of teaching 'real' English.

Relying on the facts mentioned above, we can state that the use of cultural based activities is a manifold process in which you can learn a little bit of psychology of different cultural background because during this course you observe behaviors of students in different cultural situations.

The results of the data obtained from the data collection instruments showed that the cultural based activities have an effective influence on the development of linguistic competency of learners as well as communicative competency. The teachers have an idea that the activities would be successful if they are presented to students in understandable way which means that they must be planned step by step.

In general, aims and objectives of the study have been reached. It has been proved that using cultural based activities as tool or way in teaching the English language is appreciated by the majority of language teachers. It has also become clear that teachers have positive attitudes towards cultural based activities. In that case cultural based activities will be not just interesting for both teachers and students to do but also bring the results you expect.

The idea of teaching a language through culture is not new to foreign language teachers. In many cases, teaching a language through cultural based activities has meant focusing a few lessons on holidays, customary clothing, folk songs, food, etc. Understanding the cultural context of day-to-day conversational conventions such as greetings, farewells, forms of addressing, thanking, making requests, and giving or receiving compliments means more than just being able to produce grammatical sentences. It means knowing what is appropriate to say to whom, in what situations, and it means understanding the beliefs and values represented by the various forms and usages of the language.

Culture can be fully or at least additionally incorporated as a vital component of language learning. Foreign language teachers should identify key cultural items in every aspect of the language that they teach. The activities should be planned according to the *exact* level of

students whether it is low intermediate or high, in order to make them feel more confident while expressing their opinions on different cultural situations, otherwise the students will not manage the discussion.

Teachers say that another point, we had to consider is the multicultural groups where each representative of different nations must be paid attention. For example, while introducing famous artists of different foreign countries do not forget to include those artists coming from the same country of your students. It will make students become pride of their nations and it can work as a motivational tool to continue the discussion activity.

The last but not least point to consider is the different cultural background of students. Before implementing some aspects of culture of a foreign language, in our case English, it is important for the teacher to take into consideration that some customs, traditions can be rude, humiliating or can be considered as abnormal by some students depending their origins especially, if we compare Christian and Muslim culture. For example, it might concern some specific vocabulary or behavioral pattern of the target culture which our student can find inappropriate. Therefore they can be forewarned about cultural and mentality diversity to provide openness of our students to different cultures or to overcome the cultural shock.

So, we came to conclusion that teaching language through culture can be profitable and fruitful but should be carefully planned and designed equally to other methods of teaching.

### **Resume**

In this article the prominent pioneers have been reviewed first about relationship between culture and language first. After that, under the lights of their ideas, the impact of cultural based activities in foreign language teaching at one certain level has been checked out through some certain classroom instructions where these designed and adapted cultural based activities used and exams given to the students. The attitudes of both teachers towards the use of cultural based activities in foreign language teaching have also been investigated by giving them questionnaires.

## References

- Adorn, T. (1993). *The Culture Industry: Selected Essay on Mass Culture*. Rutledge.
- BillGenk and Endogen Bada. (2005). *Culture in language learning and teaching*. Turkey. University of Çukurova.
- Byram, M. (1997). *Teaching and assessing intercultural communicative competence*.
- Chomsky, N. (1968). *Language and Mind*. Harcourt Brace Jovanovich, Inc.
- Davidson, D. (1999). *The Philosophy of Donald Davidson*. (Ed) Lewis Edwin Hahn. Illinois: Open Court Publishing Company.
- Dilthey, W. (1989). *Introduction to the Human Sciences: An Attempt to Lay a Foundation for the Study of Society and History*. Wayne State University Press.
- Edward Sapir (1921). *An Introduction to the Study of Speech*. New York.
- Foucault, M. (1994). *The Order of Things: Archaeology of the Human Sciences*. USA: Vintage Books.
- Gardner, R. C., & Lambert, W.E. (1959). Motivational variables in second language acquisition. *Canadian Journal of Psychology*, 13, 266- 272.
- Gardner, R. C., & Lambert, W. E. (1972). *Attitudes and motivation in second language learning*. Rowley, MA: Newbury.
- Humboldt, K. W. (1876). The heterogeneity of language and its influence on the intellectual development of mankind.
- Kitao, K. (2000). <http://eric.ed.gov/PDFS/ED330214.pdf>.
- Kramsch, C. (1993). *Context and Culture in Language Teaching*. Oxford University Press
- Kunanbayeva, S. (2005). *Modern Foreign Language Education, Methodology and Theory*, Dom Pechat, Almaty.
- Laura A, *From Cognitive Linguistics to Cultural Linguistics*, for publication in *Slovo a smysl /Word and Sense* (ISSN 1214-7915), University of North Carolina and University of Tromsø.
- McKay, (2003). *Teaching English as an International Language: Rethinking goals and approaches*. Oxford University Press.
- Quine, W. V. (1980). *From a Logical Point of View: Nine Logico-Philosophical Essays*. Harvard University Press.



Richards, J. and Rodgers, T. (2002): Approaches and Methods in Language Teaching, Cambridge: CUP

Sapir, E. (1962). Culture, Language and Personality. University of California.

Saussure, F. (1966). Course in General Linguistics. Edited by Charles Bally, Albert Sechehaye collaboration with Albert Riedlinger. Translated by Wade Baskin.

Sebnem Penbek, Dicle Yurdakul A. GuldemCerit. (2009). Intercultural Communicative Competence: A study about the Intercultural Sensitivity of University students based on their education and international experiences. Turkey, Izmir University of Economics.

Sysoyev, P.V.&Donelson L.R. (2004). Teaching Cultural Identity through Modern Language: Discourse as a Marker of an Individual's Cultural Identity.

Wittgenstein, L. (1980). 'Culture and Value.' (Trans. by Peter Winch) Chicago: Chicago University Press. 84

Whorf, B. L. (1956). Language, Thought, and Reality: Selected Writings of Benjamin Lee Whorf. (Ed) John B. Carroll. Cambridge: MIT Press.

<http://orvillejenkins.com/ethnicity/culturelearn.html>, Orville Boyd Jenkins, EdD, PhD, Culture, Learning and Communication, First posted 1 April 2000, last updated 1 February, 2010.

[http://www.developingteachers.com/articles\\_tchtraining/culture1\\_dimitrios.htm](http://www.developingteachers.com/articles_tchtraining/culture1_dimitrios.htm), Dimitrios Thanasoulas, Language and Culture - a thesis, 2000-2009

<http://edition.tefl.net/articles/teacher-technique/language-culture/>, Leveridge. N. A, the Relationship between Language & Culture and the Implications for Language Teaching, TEFL.net.

# *The Impact of Oil Related Costs on the Growth of the Nigerian Economy*

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## **Abstract**

The agitations, contestations and conflicts in the Nigerian economy result to oil related costs, expenditure allocation costs and social/human costs. Different aspects of these costs have been identified and measured. This study therefore examines the impact of oil related costs on the different sectors of the Nigerian economy. To analyze the issue, a small macro econometrics model was built for the economy. The macro-econometric model comprises of five sectors, namely, aggregate demand, aggregate production, Nigeria's fiscal system, financial sector and external sector. The model was estimated using Two Stage Least Squares techniques and solved to derive baseline equilibrium values of the endogenous variables. The model was found to effectively track the key turning points of the endogenous variables and was then used to conduct simulation experiment. The results revealed an increase in government consumption expenditure, private consumption expenditure and gross fixed capital formation of 6%, 9.9% and 1.8% respectively. Also, aggregate demand and government capital expenditure increased by 6.9% and 9.9% respectively. These percentages indicate the lost the economy incurred as a result of the oil related costs. In the production sector, the results shows negative impact on the output of agriculture and Manufacturing sectors of 1.5% and 2.1% respectively. All these cumulate to have negative effect on the growth of the Nigerian economy.

Key words: Economic Growth, Costs, Macro model, Contestations, Stochastic Equations

## Introduction

The Nigerian economy is besieged with diverse forms of conflicts ranging from political, ethnic, religious, regional and the contestations arising from fiscal matters. The contestation in Nigeria, especially on fiscal matters dates back to the pre-colonial period. In the colonial era, the disagreement was between the regions and the central government and among the regions over issues of revenue sharing, central government's expenditure in the regions, and fiscal responsibilities. The extent and the dimension of the contestation have continued to be intensified and worsened as the economic and political events continued to impact on the country. In addition, as the country fragments more, the scope of players in the conflicts also continues to increase. For instance, before the advent of oil, the contestations were mainly between central government and regions and regions versus regions. Presently however, the scope has gone beyond that. It now involves all the levels of government in the country, oil and non-oil producing states, multinational oil companies, and communities in the Niger Delta Region. These key players always have conflicting interests.

In sharing the revenue among the regions, there used to be disagreements over the derivation principle as it was alleged to have favoured some regions more than others. For instance, its application on motor spirit, excise and export duties was in favour of the West, but its application on mining rents and royalties favored the North more for tin and columbite. That generated tension among the regions. Whereas the North faulted its application and called for its review, the West felt the use of the principle be made to continue further. The East on the other hand, called for its abolition (Uche, 2004).

Other incidences of contestations are the Supreme Court judgment in the onshore-Offshore dichotomy in 2002, the unresolved issues at the National Political Conference etc. The stormiest matter is the revenue allocation manifested in the numerous commissions set to recommend the acceptable formula for the country. The central issue of concern that generates the contestations is the quest for 'resource control'. Among the levels of governments, the disagreement is over the rates of revenue allocation, and among the states, the contentions are over the principles used in sharing the states allocations. In the Niger Delta Region, the agitation revolves around issues of oil rents, compensation and provision of infrastructure, claims to ownership of oil fields, environmental degradation and profit maximization. The communities in the region resorted to violence and open conflicts over resources control matters for two basic reasons: (i) that communities and governors in the Niger Delta should have 'control' over 'their' resources or at least be given preferential treatment in the sharing of its rents. (ii) Since they are the immediate victims of the negative externalities of oil and gas production which is the major source of the country's revenue, they should be 'adequately' compensated. The tension and the open conflicts have enormous costs to the communities in particular and the country at large (Garba, 2004, Abachi, 2013). With oil being strategic as the anchor for Nigeria's fiscal system and as the main source of foreign exchange inflow, contestations that impact negatively on oil revenue will have systematic effect on the growth of the Nigerian economy.

Given this scenario, the immediate issue of concern is to identify the various costs incurred in the Nigerian economy due to the sustained conflicts and contestations and how to measure them. Abachi, (2013), studied 'The Economic Cost of Fiscal Centralization on the Growth of the Nigerian Economy' and the study indeed addressed this issue. The identified costs are the oil related costs, expenditure allocation costs and social/human costs. In analyzing the oil related costs, the cost elements discussed were the cost of shut in of oil production, illegal oil bunkering and military damages. These were estimated and the summary is shown in Table one below.

Table 1: Summary of Oil Related Costs (N Billion)

Year	Shut in of Oil Production	Illegal Oil Bunkering	Military Damages	TOTAL
2001	209.1	55.6	166.8	431.5
2002	235.1	60.3	180.9	476.3
2003	343.7	127.3	193.8	664.8
2004	469.1	81.1	239.2	789.4
2005	690.6	379.5	236.3	1306.4
2006	498.1	368.2	1193.7	2060
2007	476.9	363.6	757.5	1598
2008	464.3	365.6	316.3	1146.2
<b>TOTAL</b>	<b>3386.9</b>	<b>1801.2</b>	<b>3284.5</b>	<b>8472.6</b>

Source: Adapted from Abachi, 2013

The Nigerian economy rests almost entirely on the oil sector. About 97% of Federally Collected Revenue in the country is derived from oil related sources and the money is shared on monthly basis to other tiers of government. The oil sector is so critical that the Federal Government's budget is prepared based on the expected international oil price, such that, whatever happens in the oil sector transmits to other sectors and affects the growth of the Nigerian economy. Therefore, given the assessed oil related costs, what then is the impact of this cost on the other sectors of the economy? This is the major question this study examines.

### Brief Review of Literature

The motivation for this study could best be handled using a macro model. According to Enang (2009), macro econometrics modeling was developed to implement some aspects of the General Theory of Keynes. Later, other paradigms such as the Monetarists, New Keynesian and the New Classical were incorporated into macro models. Macro econometrics models have been constructed for individual countries. For instance, Palanivel and Klein (1999) built a macro econometrics model for India to analysis fiscal deficit, money supply, inflation and output.

Dietske and Ferdinand (2009) applied a macroeconomic-based model for estimating probabilities of default in Netherlands. The first part of the study focused on the relation between macroeconomic variables and the default behavior of firms. The second part however assessed the default behavior based on a stress scenario of two consecutive quarters of zero GDP growth as required by the Basel II framework. The results revealed that a stress-test scenario covering two quarters of zero GDP growth does not influence the default rate significantly.

In Nigeria, some of the early works that constructed macro econometrics models to analyze some macroeconomic issues were those of Ojo (1973), Uwujaren (1977), Olofin and Poloamina (1984), Soludo (1998) etc. On macro econometrics modeling, Oduh (2012) analysed the challenges of theorizing African economy using macro econometrics models to explain the future of non-inclusive growth. The author argued that the policy failure of economies relying on theoretical macro models could be due to the fact that such models consider all economies as having the same characteristics, whereas, in reality, every economy is unique. The study suggests that African economy needs to redefine economic theory to suit its uniqueness rather than to use economic theory to define African economy.

In Nigeria, macroeconomic issues are not only handled using macro econometrics models. For instance, Enang (2009) investigated the dynamics in the interaction of monetary

variables with various sub-sectors of the Nigerian economy. The study divided the Nigerian economy into six sectors but adopted co-integration and error correction methodology for the analysis. Simulation experiments were conducted to investigate how monetary variables interact with aggregate supply, demand and prices to aid stabilization policies. Findings revealed that monetary variables and government finances are linked through government's net indebtedness to the banking system. Also, Olu, (1999) examined the macroeconomic effects of VAT in Nigeria. The study surveyed VATable Nigerian manufacturers, distributors, importers and suppliers of goods and services organizations and investigated how VAT was treated by these organizations within the study period. The survey centered on key sectors and some macroeconomic aggregates in Nigeria. In this study, a Computable General Equilibrium (CGE) model was used and the result indicated that VAT was treated in a price cascading manner. In other words, VAT was regarded by these organizations as cost contrary to expectations.

Many other recent studies in Nigeria applied macro econometrics models. Agu (2010) examined the macroeconomic policies and capital flight from Nigeria. The study was set to contribute to the prevailing debate on how effective or otherwise the monetary and fiscal policy in Nigeria reduces capital flight. In undertaking this task, the author built a macro econometrics model to empirically evaluate the place of risk in capital flight and assess the effectiveness of domestic fiscal and monetary policies in combating capital flight. The model divided the economy into six sectors and specified 44 equations. The result indicated that risk and volatility influences outflow of capital and that capital flight was found to respond directly to capital controls. Indirect control of capital flight using fiscal and monetary policies was found in the study within the period. Olusegun and Charlotte (2010) developed comprehensive full-sector macro-econometric models for the Nigerian economy to explain and provide a long-term solution for the persistent growth-poverty divergence in the country. The applied model comprised of supply side oriented model and the demand side oriented model. In the model, a price block was incorporated to specify the price adjustment between the supply-side sector and real aggregate demand sector. The institutional characteristics with associated policy behaviour were incorporated through a public and monetary sector, whereas the interaction with the rest of the world was represented by a foreign sector. The models were estimated with time-series data using the Engle-Granger two-step co-integration technique, capturing both the long-run and short-run dynamic properties of the economy. The full-sector models were subjected to a series of policy scenarios to evaluate various options for government to improve the productive capacity of the economy, thereby achieving sustained accelerated growth and a reduction in poverty in the Nigerian economy. Different policy simulations were applied in order to detect optimal policy options for the government. One of the major findings was that the external shocks which were simulated revealed the vulnerability of the domestic economy to shocks from the global economy.

Given that the oil sector and other sectors of the Nigerian economy are inter linked and interwoven, to examine the impact of the oil related costs on the economy would require applying a macro econometrics model rather than other possible methods. It is therefore most appropriate to build a macro econometrics model for this study.

### **Methodology**

A small macro-econometrics model is built for use in the study. In building the macro-econometrics model, we divide the Nigerian economy into five sectors. These are the aggregate demand sector, the production sector, the Nigeria's fiscal system, the financial sector and the external sector.

### Model Discussion and Specification

Identities and stochastic equations are specified based on the sectors assumed for the country. Since we conceived the Nigerian economy to consist of five sectors, the macro model is also made to have five main blocks. These are; the aggregate demand sector, the Nigeria's fiscal system, the production sector, the financial sector, and the external sector.

In the *aggregate demand* component of the model, the Keynesian specification of aggregate demand is the starting point.

$$Y = C + I + G + (X - M) \quad \text{----- 1}$$

It follows therefore that;

$$RY = \Omega + (X - M) \quad \text{----- 2}$$

Where RY is real GDP,  $\Omega$  is the domestic absorption and X and M are export and import respectively. The theoretical approaches explaining the channels of aggregate demand variables are the relative price approach, the income approach, the Laursen-Metzler synthesis, the monetary approach and the absorption approach. Dauda, (2009) argues that absorption approach analyses macroeconomic issues more than others, as it has the capacity to build in other approaches in explaining channels of relationships among macroeconomic variables. An absorptive capacity is viewed as the ability of an economy or a sector to utilize factor inputs to effect positive returns on output and enhance the growth of the economy. It is the situation whereby an economy or a sector can fully utilize capital inputs to enhance investment and growth of the economy. Using the Keynesian identities and following Olofin et al, 2009, we disaggregate the capacity absorptive components (C, I, G) as follows.

$$C = PCE + GCE \quad \text{----- 3}$$

$$GCE = C - PCE \quad \text{----- 4}$$

$$I = PIE + GIE = GFCE + GE \quad \text{----- 5}$$

$$GE = GCE + GIE + DSP \quad \text{----- 6}$$

Where, PIE and GIE are private investment expenditure and government investment expenditure respectively. GE and DSP are government expenditure and debt service payment respectively.

From the foregoing;

$$Y_t = PCE + GCE + PIE + GIE + GE + (X - M) \quad \text{----- 7}$$

Equation 7 is the composition of national income with the aggregate explanatory variables.

Given the volume of oil related costs in the country within the period, its impact is likely to be felt in all sectors of the economy since the economy is heavily dependent on the oil sector. The disruption in the sector affects the Federally Collected Revenue (FCR) of the country and consequently, the expenditure of different segments. In that regards, we decompose GE to include government expenditure on militancy or cost of fiscal centralization (GES), where GES is government expenditure on defence and internal security.

Hence equation 6 becomes;

$$GE = GCE + GIE + DSP + GES \quad \text{----- 8}$$

Therefore, the general forms of equations for this sector are specified as follows:

$$PCE_t = f(NGDP, PCE_{t-1}, EXB, TFXR, CPI, GES, MS) \quad \text{----- 9}$$

$$GCE_t = f(OIR, NOIR, EXB, CPI, GCE_{t-1}, TFXR, GES) \quad \text{----- 10}$$

$$GFCE_t = f(RGDP, CPF, CPI, OPEN, GFCE_{t-1}, EXR, KE) \quad \text{----- 11}$$

$$AD_t = f(PCE_{t-1}, GCE, GFCE, GES) \text{ ----- 12}$$

Where; RGDP is real GDP, CPI is consumer price index, OIR is oil revenue, TFXR is total foreign exchange reserve, EXB is external debt, OPEN<sup>1</sup> represents openness, EXR is foreign exchange, CPF is capital flight and AD represents aggregate demand. All other variables remained as earlier defined.

In the *Nigeria's Fiscal System*, it is clear that;

$$FCR = f(OIR, NOIR,) \text{ ----- 13}$$

$$OIR = f(PPT, OTH) \text{ ----- 14}$$

$$NOIR = f(CIT, CEO, FIR) \text{ ----- 15}$$

Where:

*FCR* = Federally collected revenue

*OIR* = Oil revenue

*NOIR* = Non oil revenue

*FIR* = Federal Independent Revenue

*PPT* = Petroleum Profit Tax

*OTH* = Others

*CIT* = Company Income Tax

*CEO* = Customs, Excise duties and others

*FCR* is derived from oil (CBN, 2006) and the non-oil component's importance is diminishing progressively as the production and sales of oil continue to increase. In Nigeria, the contestation is on the sharing of *FCR*. The sharing is usually vertically among the three levels of governments and horizontally among the states and local governments.

Following from Garba 1998, the complete stochastic revenue and expenditure reaction functions of the Nigeria's fiscal system are stated as follows:

$$OIR = f(PPT, OTH) \text{ ----- 16}$$

$$NOIR = f(CIT, CEO, FIR) \text{ ----- 17}$$

$$RE = f(OIR, NOIR, EXB, EXR, GRES) \text{ ----- 18}$$

$$KE = f(OIR, NOIR, EXB, CPI, KE_{(-1)}, Y_{OG}, TFXR, GKES) \text{ ----- 19}$$

$$CPI = f(MS, EXR, OIR, CPI_{t-1}, NOIR, TFXR) \text{ ----- 20}$$

Equation 18 is the composition of government revenue function in Nigeria. The revenue function changes as the development in the country evolves with time. For instance, in the sixties and early seventies, the sources of government revenue were mainly export and import taxes from agricultural products and other internal tax revenue (Olofin, 1985). Today, the bulk of the revenue comes mainly from oil (OIR) and non-oil (NOIR) sources. Also included in the function in this study are variables such as exchange rate (EXR) and RGDP. The government expenditure functions and the consumer price index are specified in equations 19 and 20. In addition to the oil and non-oil variables, the GE specification includes external borrowing (EXB), consumer price index (CPI), total foreign exchange reserve (TFXR), and government expenditure on security (GES). Since government spends on both recurrent and capital goods, the GE function is disaggregated into government recurrent expenditure (RE) and capital expenditure (KE). Accordingly, the GES is also disaggregated into government recurrent expenditure on security (GRES) and government capital expenditure on security (GKES) and are included in their respective functions. Generally, the above specification

<sup>1</sup> OPEN = X+M/GDP

reveals Nigeria's fiscal system and the means of financing expenditure partly from federally collected revenue and partly by borrowing. The specification is deduced mainly from Garba, (1998) framework which revealed that federal government expenditure is sensitive to oil price shocks as they impact directly on FCR. In addition, federal aggregates are generally sensitive to the determinants of federal expenditure components and their transmission mechanisms. The basic assumption underlying this specification is that federal expenditure reaction functions are sensitive to exogenous shocks, federal oil revenue, external debt and the expenditure on militancy, rebellion and conflicts in Niger Delta Region, proxy by government expenditure on security.

The production sector in Nigeria is generally grouped into five major areas, namely; Agriculture, Industry, Building and Construction, Wholesale and Retail Trade, and Services (CBN, 2011). Each of these major groups is sub-divided into different units. In this study, we however divide the production sector into four sub-sectors, which are: Oil and Gas sub-sector, Agricultural sub-sector, Manufacturing sub-sector, and others. The aggregate production function takes the form

$$Y = Y_{OG} + Y_A + Y_M + Y_{OTH} \text{ ----- 21}$$

Where  $(Y_{OG})$ ,  $(Y_A)$ ,  $(Y_M)$  and  $(Y_{OTH})$  are sub-sector real output. The sub-sector specific specifications in the model are discussed as follows:

The oil and gas sub-sector in Nigeria is dominated by private and the government sectors and the investment in the sector is highly capital intensive. So, we have private capital expenditure (PKE) and government capital expenditure (GKE) prominent in the sector. Being a capital intensive sub-sector, importation of capital goods is important. So, for the Oil and Gas sub-sector  $(Y_{OG})$ , the relevant input factors are physical labour inputs (LAOG), import of capital goods (MKG), government consumption expenditure (GCE), foreign investment in industrial sector (FIID) and import of manufactured goods (MMG). For agriculture  $(Y_A)$ , the input variables are identified as labour inputs (LAG), import of raw material (MMG), import of capital goods (MKG), foreign investment in agriculture (FIAG), government consumption expenditure (GCE), consumer price index (CPI) and lag real output in agriculture. For Manufacturing  $(Y_M)$ , the relevant input variables are; labour input (LMA) import of raw materials (MRG) capacity utilization (CU), consumer price index, and import of capital goods. Also included in the specification for this sector are real outputs in oil and gas and agriculture sub-sectors as well as government consumption expenditure. For others  $(Y_{OTH})$ , reference is made to equation 21, so that,

$$Y_{OTH} = Y - (Y_{OG}, Y_A, Y_M) \text{ ----- 22}$$

From the above, the relevant specifications are made as follows;

$$Y_{OG} = f( AL^{\alpha_1} FIID^{\alpha_2} LAOG^{\alpha_3} GCE^{\alpha_4} MKG^{\alpha_5} MMG^{\alpha_6} RGDP_{OG}(-1)^{\alpha_7} ) \text{ ----- 23}$$

$$Y_A = f( AL^{\alpha_1} FIID^{\alpha_2} LAG^{\alpha_3} KE^{\alpha_4} MKG^{\alpha_5} MMG^{\alpha_6} INF^{\alpha_7} Y_{A-1}^{\alpha_8} ) \text{ ----- 24}$$

$$Y_M = f( AL^{\alpha_1} LMA^{\alpha_2} GCE^{\alpha_3} MKG^{\alpha_4} MRG^{\alpha_5} CPI^{\alpha_6} Y_A^{\alpha_7} Y_{OG}^{\alpha_8} CU^{\alpha_9} ) \text{ ----- 25}$$

$$CU = f( MKG, MRM, Y_{OG}, Y_A, Y_M, GES ) \text{ ----- 26}$$

The variables in the specifications are as defined above and the superscripts  $\alpha_1$ ----- $\alpha_n$  represent elasticities. Equation 26 is also included in the model due to the general capacity underutilization in the Nigerian economy. This specification is meant to determine the capacity underutilization rate, which may come from all the sectors. Since the oil and gas sector is



foreign based, the underutilization in the sector may come mainly from shortage of imported inputs and the one from the non-oil sectors may be from shortage of productive inputs, among other factors.

The *Nigerian financial sector* comprises of money demand ( $M_d$ ) and supply of money ( $M_s$ ), hence,

$$M_d = M_s \text{ ----- 26}$$

The general specifications are

$$M_d = SPC + TRN + PRC \text{ ----- 27}$$

$$M_s = \Delta TFX + \Delta CBCrG \text{ ----- 28}$$

$$M_s = BDF + DCP + TFX \text{ ----- 29}$$

Where  $\Delta CBCrG$  is Central Bank's credit to government, BDF is budget deficit, and DCP is the domestic credit to private sector, while other variables remain as earlier defined. The stochastic components are;

$$M_d = f(NGDP, INF, EXR, KE) \text{ ----- 30}$$

$$M_s = f(NGDP, INF, FIID, KE,) \text{ ----- 31}$$

$$EXR = f(OPEN, TOT, MS, TFXR) \text{ ----- 32}$$

In this money survey sector, the equations specified are based on the availability of data from the major data source in Nigeria- the Central Bank of Nigeria. Accordingly, the specifications included in the model from this sector are to determine the money stock and the exchange rate in the economy. One of the implications for the demand theory of money is that it is infinitely elastic at low nominal rate. Hence we assume in this study that the demand for money balance is positively related to real gross domestic product, and negatively related to opportunity cost of money. In Nigeria, since the nominal exchange rate has been fixed for a long time, we use the real exchange rate in this study. We also include in the money demand specification inflation rate and government capital expenditure. The money supply equation is conceived as changes in stock of high powered money as specified by Central Bank of Nigeria. Thus the desired money supply is postulated to depend on nominal income, and inflation rate. It is also related to foreign investment in the industrial sector as well as the capital investment in the economy. The exchange rate equation is defined to depend on the index of openness (OPEN), terms of trade (TOT), money supply and total foreign exchange rate.

$$\text{In the external Sector, output} \equiv X - M \text{ ----- 33}$$

$$X = OIX - NOIX \text{ ----- 34}$$

$$M = MKG + MRG + MMG + MO \text{ ----- 35}$$

Where:

OIX is oil export; NOIX represents non-oil export, MO represents import of other goods while MKG, MRG and MMG remain as earlier defined. The functional forms of the variables in the external sector of the model are specified as follows:

$$OIX = f(OPR, OQT,) \text{ ----- 36}$$

$$NOIX = f(RGDP, TFXR, NOIX_{t-1}, OPEN) \text{ ----- 37}$$

$$MKG = f(RGDP, EXR, TFXR, OPEN, RGDP_{t-1}) \text{ ----- 38}$$

$$MRG = f(RGDP, CU, EXR, TFXR, OPEN, MT, RGDP_{t-1}) \text{ ----- 39}$$

$$MMG = f(RGDP, CU, EXR, TFXR, OPEN, MT, RGDP_{t-1}) \text{ ----- 40}$$

$$TOM = f(MKG + MRG + MMG + MO) \text{ ----- 41}$$

Where EXR is real exchange rate, TFXR is foreign exchange reserve, MT represents import tariff, TOM represents total imports, while other variables remain as earlier defined.

### The Stochastic Equations

The stochastic equations are derived directly from the discussions and specifications presented in the above section. Equations from each of the sectors are re-stated in stochastic form for estimation. The equations from the production sector are transformed to estimable forms by the use of log.

In the empirical model, the specifications of the determinants of the equations in the model were altered after a trial estimation of the model was made. Variables such as inflation and interest rate which were included in almost all the expenditure equations in the theoretical specifications were dropped. Instead of inflation, the consumer price index is used and that explains why the CPI function is specified in the Nigeria's fiscal system sector. For interest rate, its non-performance in the private and government consumption in Nigeria (for the period of the study) suggest that the principle of inter-temporal substitution in consumption through borrowing and lending, influenced by changes in interest rate does not hold. Thus, the life-cycle theory of consumption, predicted on the variations in interest rate is rejected using the aggregate data. Also in the discussion and specification of the model, we used real gross domestic product only, but we discovered that nominal gross domestic product performed better in some specifications, so both RGDP and NGDP are used in the empirical specification.

The stochastic specification of the model in each of the five sectors is as follows:

#### Aggregate demand Sector

$$PC = \alpha_0 + \alpha_1 NGDP + \alpha_2 PC_{t-1} + \alpha_3 CPI + \alpha_5 GES + \alpha_6 EXB + \alpha_7 TFXR + \alpha_8 MS + \mu_t \quad 42$$

$$GCE = \alpha_0 + \alpha_1 OIR + \alpha_2 CPI + \alpha_3 GCE_{t-1} + \alpha_4 TFXR + \alpha_5 GES + \alpha_6 NOIR + \alpha_7 EXB + \mu_t \quad 43$$

$$GFCF = \alpha_0 + \alpha_1 RGDP + \alpha_2 OPEN + \alpha_3 CPI + \alpha_4 EXR + \alpha_5 GFCF_{t-1} + \alpha_6 CPF + \alpha_7 KE + \mu_t \quad \text{----}44$$

$$AD = \alpha_0 + \alpha_1 PCE(-1) + \alpha_2 GCE + \alpha_3 GFCF + \alpha_4 GES + \mu_t \quad \text{-----} 45$$

#### Nigeria's Fiscal System

$$OIR = \alpha_0 + \alpha_1 PPT + \alpha_2 OTH + \mu_t \quad \text{-----} 46$$

$$NOIR = \alpha_0 + \alpha_1 CIT + \alpha_2 CEO + \alpha_3 FIR + \mu_t \quad \text{-----} 47$$

$$RE = \alpha_0 + \alpha_1 OIR + \alpha_2 NOIR + \alpha_3 EXB + \alpha_4 EXR + \alpha_5 GRES + \mu_t \quad \text{-----} 48$$

$$KE = \alpha_0 + \alpha_1 OIR + \alpha_2 NOIR + \alpha_3 EXB + \alpha_4 CPI + \alpha_5 KE_{t-1} + \alpha_6 RGDP_{OG} + \alpha_7 TFXR + \alpha_8 GKES + \mu_t \quad \text{-} 49$$

$$CPI = \alpha_0 + \alpha_1 MS + \alpha_2 EXR + \alpha_3 OIR + \alpha_4 CPI_{t-1} + \alpha_5 NOIR + \alpha_6 TFXR + \mu_t \quad \text{-----} 50$$

#### Production Sector

$$\log Y_{OG} = \log A + \alpha_1 \log LAOG + \alpha_2 \log GCE + \alpha_3 \log MKG + \alpha_4 \log MMG + \alpha_5 \log FIID + \alpha_6 \log CIS + \alpha_7 \log BKN + \alpha_8 \log RGDP_{OG}(-1) + \mu_t \quad \text{----} 51$$

$$\log Y_A = \log A + \alpha_1 \log LAG + \alpha_2 \log KE + \alpha_3 \log MKG + \alpha_4 \log MMG + \alpha_5 \log INF + \alpha_6 \log RGDP_{A-1} + \alpha_7 \log FIID + \mu_t \quad \text{-----} 52$$

$$\log Y_M = \log A + \alpha_1 \log LMA + \alpha_2 \log GCE + \alpha_3 \log MKG + \alpha_4 \log MRG + \alpha_5 \log CPI + \alpha_6 \log RGDP_A + \alpha_7 \log RGDP_{OG} + \alpha_8 \log CU + \mu_t \quad \text{-----} 53$$

$$CU = \alpha_0 + \alpha_1 \log MKG + \alpha_2 \log MRM + \alpha_3 \log Y_{OG} + \alpha_4 \log Y_M + \alpha_5 \log Y_A + \alpha_6 GES + \mu_t \quad 54$$

**Financial sector**

$$MD = \alpha_0 + \alpha_1 NGDP + \alpha_2 INF + \alpha_3 EXR + \alpha_4 KE + \mu_t \quad \text{-----} \quad \text{-----} \quad 55$$

$$MS = \alpha_0 + \alpha_1 NGDP + \alpha_2 INF + \alpha_3 KE + \alpha_4 FIID + \mu_t \quad \text{-----} \quad \text{-----} \quad 56$$

$$EXR = \alpha_0 + \alpha_2 OPEN + \alpha_3 TOT + \alpha_4 MS + \alpha_5 TFXR + \mu_t \quad \text{-----} \quad \text{-----} \quad 57$$

**External Sector**

$$OIX = \alpha_0 + \alpha_1 OQT + \alpha_2 OPR + \mu_t \quad \text{-----} \quad \text{-----} \quad 58$$

$$NOIX = \alpha_0 + \alpha_1 RGDP + \alpha_2 TFXR + \alpha_3 NOIX_{t-1} + \alpha_4 OPEN + \mu_t \quad \text{-----} \quad \text{---} \quad 59$$

$$MKG = \alpha_0 + \alpha_1 RGDP + \alpha_2 EXR + \alpha_3 TFXR + \alpha_4 OPEN + \alpha_5 RGDP_{OG} + \alpha_6 MKG_{-1} + \mu_t \quad \text{---} \quad 60$$

$$MRG = \alpha_1 + \alpha_2 RGDP + \alpha_3 CU + \alpha_4 EXR + \alpha_5 TFXR + \alpha_6 OPEN + \alpha_7 MT + \alpha_8 RGDPM + \mu_t \quad \text{--} \quad 61$$

$$MMG = \alpha_0 + \alpha_1 RGDP + \alpha_2 CU + \alpha_3 EXR + \alpha_4 TFXR + \alpha_5 OPEN + \alpha_6 MT + \alpha_7 RGDPM + \mu_t \quad \text{-----} \quad 62$$

$$TOM = \alpha_0 + \alpha_1 MKG + \alpha_2 MRG + \alpha_3 MMG + \alpha_4 MO + \mu_t \quad \text{-----} \quad \text{-----} \quad 63$$

**The Estimation Method**

The macro-econometric model for the study contains 22 stochastic equations from the five sectors of the Nigerian economy assumed in this study. These equations are estimated before performing the dynamic simulation experiment to determine the dynamic effect of the cost on the economy. The structure of the model is such that some independent variables appear in other equations as dependent variables. Therefore the use of Ordinary Least Square (OLS) techniques to estimate the equations of a macro model gives biased and inconsistent estimates of parameters. To overcome this problem in our study, we used the Two-Stage Least Square (2SLS) method, a method supported by Johnson and DiNardo, (1997) for estimating systems of simultaneous equations. Econometrics views (E-Views) software was used for estimating the empirical equations and for performing simulation experiments. A detail definition of the identities, endogenous and exogenous variables of the model is presented in Table 2.

**Table 2. Definitions of Variables**

ENDOGENOUS VARIABLES	EXOGENOUS VARIABLES
AD = Aggregate Demand	CEO= Customs, Excise duties and Others
CPI = Consumer Price Index	CIT =Company Income Tax
CU = Capacity Utilization	CPF= Capital Flight
EXR = Exchange Rate	EXB= External Borrowing
GCE = Government Consumption Expenditure	FCR= Federally Collected Revenue
GFCF= Gross Fixed Capital Formation	FIAG = Foreign Investment in Agriculture
KE = Government Capital Expenditure	FIID = Foreign Investment in Industry
MD = demand for Money	FIR = Federal Independent Revenue
MKG = Import of Capital Goods	GES = Government Expenditure on Security
MMG = Import of Manufactured Goods	GKES = Government Capital Expenditure on Security
MRG = Import of Raw Materials	GRES = Government Recurrent Expenditure on Security
MS = Supply of Money	INF = Inflation
NOIR = Non Oil Revenue	LAG = Labour Input in Agriculture
NOIX= Non oil Export	LMA = Labour Input in Manufacturing
OIR = Oil Revenue	MT = Import Tariff
OLX = Crude Oil Export	NGDP = Nominal Gross Domestic Product
PC = Private Consumption Expenditure	OPEN = Openness
RE = Recurrent Expenditure	OPR = Oil Price
RGDPA = Real Output in Agriculture	OQT = Oil Quantity Produced
RGDPM = Real Output in Manufacturing	OTH = Others
RGDPOG = Real Output in Oil and Gas	RGDP =Real Gross Domestic Product
TOM = Total Import	TFXR = Total Foreign Exchange Reserve
	TOT = Terms of Trade

### Source of Data

The main source of data for the study is from the Central Bank of Nigeria (CBN) and the National Bureau of Statistics (NBS). The CBN's Statistical Bulletins of different years were used in compiling the data on the specified variables in the model. Where data on some needed variables were not available, appropriate proxy were obtained.

### Scenario

One scenario is considered and simulated in the study. The oil related costs constitute loss of revenue to the country as it reduces the oil revenue (OIR) of the government. If these costs were not incurred within the period, OIR would have been increased by this amount (N8, 472.6 Billion). We therefore divide oil related costs by the scope of the study and add to OIR equation and carry out the simulation.

### The Estimated Results

The summary of the estimated equations and the actual estimates are contained in Appendix 1. Appendix 2 shows the significance of the variables from the model at 5% and 10% levels.

In the aggregate demand sector (Eq. 42 to Eq. 45), the significant determinants of private consumption expenditure in Nigeria are lagged private consumption expenditure,

consumer price index, government expenditure on security, total foreign exchange reserve and money supply. Observing the magnitude and signs of the coefficients, government expenditure on security and consumer price index have positive contributions to private consumption expenditure in Nigeria. The same situation is obtained in the government consumption expenditure (Eq.43). It means then that government expenditure on security is an important determinant of expenditure of the federal government in Nigeria. Given the present fiscal centralization in the country, this category of expenditure keeps increasing as militancy continuous to intensify in the Niger Delta Region. In the gross fixed capital formation (Eq.44), exchange rate is the only significant factor in this specification and has positive sign. All other determinants are not significant but have positive signs except government capital expenditure which is negative. Other variables not significant in the aggregate demand sector are indicated accordingly as shown in Appendix 2

Equations 46 to 50 constitute the equations in the Nigeria's Fiscal System. All the determinants of oil revenue and non-oil revenue are significant as expected. However, the petroleum profit tax shows negative contribution. The other determinant of oil revenue termed 'others' (OTH) comprises of revenue from export sales, domestic sales, taxes on petroleum products and rents. Again, from 1999 to date, crude oil/gas exports has become another important component of the 'others' and the yield from crude oil/gas exports alone far exceed the income from petroleum profit tax. When all these are put together, petroleum profit tax appeared to be insignificant compared to 'others'. That explains why its coefficient indicates negative sign. In the non-oil equation, all the variables carry positive signs as expected except customs, excise duties and others (CEO), which is negative. In the recurrent expenditure (RE), government capital expenditure (KE) and consumer price index (CPI) equations, both oil revenue and non-oil revenue are significant with positive signs in the recurrent expenditure specification but non-oil revenue is significant in (KE) equation while oil revenue in (CPI) equation is significant. Government recurrent expenditure on security and defence is significant in the recurrent expenditure profile of the federal government. The variables not significant in the Nigeria's Fiscal System sector are as indicated.

In the production sector, government consumption expenditure is significant with positive sign in the output of oil and gas but has negative sign in manufacturing. Labour inputs are significant in the agriculture and manufacturing sub-sectors but not significant in oil and gas sub-sector. That is attributed to the fact that oil and gas is capital intensive, where as agriculture and manufacturing; especially in the Nigerian economy is highly labour intensive. In the capacity utilization, among the significant determinants, government expenditure on security is significant and contributes positively to capacity utilization in the country.

The equations in the money survey of financial sector are the demand for money, supply of money and exchange rate (Eq. 55 to Eq. 57). Inflation rate is not a significant determinant in the demand for and supply of money but has positive sign. Government capital expenditure is significant and positive in the two equations. In the exchange rate specification, the index of openness is significant and positive while other variables are not.

In the crude oil export equation (Eq.58) in the external sector, the oil quantity produced contributed positively and is significant while the oil price is not. The index of openness is significant and positive but the import of capital and manufactured goods not significant. Regarding the import of manufactured goods, total foreign exchange reserve has positive contribution and is significant, while variables such as exchange rate, capacity utilization, real output, terms of trade etc are not significant.

### Validation of Estimated Model

The estimation of the macro econometrics model as presented in the preceding section was simulated to analyze the objectives of the study. To validate the estimated model, we examined the graphs of the 22 endogenous variables and use Theil's inequality coefficients. It is expected that the actual values of the endogenous variables tracked with the simulated values. Therefore the actual and the simulated paths of the endogenous variables are plotted together and are presented in Appendix 3 (Figures 1, 2, 3 and 4). The four set of figures are plotted from the deterministic- dynamic solution; deterministic static solution; stochastic dynamic solution and stochastic statistic solution respectively. It is generally observed that the model has good tracking power. In other words, the simulated values were able to replicate the critical turning points of the historical data, meaning that the model is appropriate for policy analysis and projections of the macro variables of the Nigerian economy.

Again the model validation statistics presented in Table 3 are used to validate the performance of the model

**Table 3: Summary Statistics of Model Validation**

Equations	Theil's Inequality Coefficient	Bias Proportion	Variance Proportion	Covariance Proportion	Correlation Coefficient
Private Consumption Expenditure (PC)	0.382	0.055	0.660	0.286	0.93
Government Consumption Expenditure (GCE)	0.186	0.510	0.169	0.321	0.96
Gross Fixed Capital Formation (GFCF)	0.215	0.849	0.010	0.142	0.91
Aggregate Demand (AD)	0.235	0.492	0.168	0.340	0.93
Oil Revenue (OIR)	0.837	0.339	0.658	0.003	0.69
None-Oil Revenue (NOIR)	0.960	0.076	0.924	0.000	0.77
Recurrent Expenditure (RE)	0.530	0.374	0.620	0.005	0.86
Government Capital Expenditure (KE)	0.399	0.288	0.623	0.089	0.85
Consumer Price Index (CPI)	0.216	0.693	0.278	0.028	0.92
Real Output in Oil and Gas (RGDPOG)	0.099	0.003	0.118	0.878	0.77
Real Output in Agriculture (RGDPA)	0.225	0.119	0.327	0.554	0.78
Real Output in Manufacturing (RGDPM)	0.131	0.128	0.000	0.871	0.65
Capacity Utilization (CU)	0.096	0.052	0.168	0.779	0.14
Demand for Money (MD)	0.990	0.227	0.737	0.036	0.79
Supply of Money (MS)	0.990	0.227	0.737	0.035	0.80
Exchange Rate (EXR)	0.221	0.313	0.276	0.410	0.90
Crude Oil Export (OLX)	0.104	0.003	0.665	0.331	0.54
None-Oil Export (NOIX)	0.423	0.714	0.220	0.067	0.87
Import of Capital Goods (MKG)	0.440	0.779	0.113	0.108	0.84

Import of Raw Materials (MRG)	0.496	0.474	0.514	0.011	0.90
Import of Manufactured Goods (MMG)	0.766	0.358	0.638	0.002	0.77
Total Imports (TOM)	0.349	0.170	0.475	0.355	0.83

Source: Computed by Author

The summary statistics, as contained in the above table are Theil's inequality coefficient, decomposed into Bias Proportion, Variance Proportion, and Covariance Proportion. Also, the Correlation Coefficients between the simulated values and the endogenous variables are shown.

The bias proportions are expected to be low. The results show that the causes of the discrepancies between the actual and the simulated values of most variables are not precipitated by the differences between their means. Except for variables such as gross fixed capital formation, consumer price index as well as money demand and supply, which show relatively high bias proportions. That does not however cancel the effective forecasting performance of the model. The variance proportion of the inequality coefficients are also quite low, indicating that the discrepancies between the actual series and the simulated are not caused by differences between their variances. Few exceptions observed in oil and non-oil variables, government recurrent and capital expenditures and monetary variables notwithstanding would not invalidate the model. The covariance proportion and the correlation coefficients are generally high, indicating that the model for the study is suitable for forecasting and policy simulations.

### Simulation Results

The scenario is simulated and the results reported in Table 4 below.

Table 4: Oil Revenue increased by the oil related costs,

Equations/Variables	Oil related costs Added to Oil Revenue (N 292200 Million)
Eq.42 Private Consumption Expenditure (PC)	9.915243
Eq.43 Government Consumption Expenditure (GCE)	6.044812
Eq.44 Gross Fixed Capital Formation (GFCF)	1.825055
Eq.45 Aggregate Demand (AD)	6.883439
Eq.46 Oil Revenue (OIR)	-0.13762
Eq.47 None-Oil Revenue (NOIR)	-0.87488
Eq.48 Recurrent Expenditure (RE)	-0.22202
Eq.49 Government Capital Expenditure (KE)	8.875758
Eq.50 Consumer Price Index (CPI)	6.222974
Eq.51 Real Output in Oil and Gas (RGDPOG)	0.792334
Eq.52 Real Output in Agriculture (RGDPA)	-1.46618
Eq.53 Real Output in Manufacturing (RGDPM)	-2.11159
Eq.54 Capacity Utilization (CU)	-1.89413
Eq.55 Demand for Money (MD)	2.921679
Eq.56 Supply of Money (MS)	5.127204
Eq.57 Exchange Rate (EXR)	-0.43556
Eq.58 Crude Oil Export (OLX)	0.01718
Eq.59 None-Oil Export (NOIX)	-0.27463

Eq.60	Import of Capital Goods (MKG)	-2.46811
Eq.61	Import of Raw Materials (MRG)	0.297659
Eq.62	Import of Manufactured Goods (MMG)	-0.31322
Eq.63	Total Imports (TOM)	-0.11255

Source: Computed by Author

If there were no militancy, the oil related costs incurred would have been part of the oil revenue therefore, the impact of simulation, as presented in Table 4 above can be seen in all the key variables of the sectors of the Nigerian economy. In the aggregate demand sector, private consumption expenditure increased by 10 percent, government consumption expenditure increased by 6 percent and investment, represented by gross fixed capital formation increased 1.8 percent. These percentages constitute the lost the economy incurred in the aggregate demand sector within the period of the study due to the oil related costs. The behaviour of these variables are as expected because the absence of oil related costs would have meant additional money to the federal government, states and the local governments. That also means more money to government workers in terms of payment of wages and other allowances, more money to local contractors and for other government consumption expenses. In the Nigeria's fiscal system, the results reveal that government capital expenditure increased by 8.9 percent and inflation rate by 6.2 percent. The results from the production sector indicate decreases in agriculture and manufacturing sub-sectors by 1.5 percent and 2.1 percent respectively. The decrease in these sectors could also be attributed to the general neglect of the agriculture sector since the advent of oil and gas resources and the general deterioration of the Nigerian manufacturing sector in recent times. It implies therefore that even if the oil related costs incurred were plucked into the oil revenue, there wouldn't have been improvement in the agriculture and manufacturing sub-sectors due to the inherent structural deficiencies. It follows logically as revealed also by the results that non-oil exports decreased by 0.3 percent and the non-oil revenue component of the federally collected revenue decreased by 0.87 percent. Whereas, in the financial sector, money supply in the economy increases by 5.1 percent, the external sector shows that the import of capital goods and manufacturing goods decreased by 2.5 percent and 0.31 percent respectively.

### **Conclusion and Recommendations**

The impact of oil related costs on the sectors and growth of the Nigerian economy was examined in this study. The simulation results show the negative impact of the costs on the aggregate variables and the key sectors of the economy. The study reveals that the oil revenue component of the federally collected revenue is continuously reduced by the oil related costs, while the non-oil revenue is also being reduced by the fall in the non-oil exports. Therefore, the federally collected revenue, on which the levels of governments in Nigeria depend for vertical and horizontal sharing is been reduced significantly. Given the rising cost of governance and the developmental challenges in the country, the nation may have to resort to external borrowing. However, the management of external debt and its history in Nigeria indicate that it does not lead to economic growth.

Based on this conclusion, we recommend that the oil related costs be minimized and if possible, completely eliminated in the country. Presently, militia activities in the Niger Delta Region which often lead to shut in of oil production and military damages have been reduced through the government's amnesty programme. The federal government should work towards maintaining this peace and eradicating oil bunkering. Secondly, the non-oil sector of the economy should be improved so as to enhance non-oil exports.



## References

- Abachi P.T (2011) “Empirical Analysis of the Cost of Fiscal Centralization in Nigeria”  
*Unpublished PhD Thesis* submitted to the Postgraduate School, Ahmadu Bello University, Zaria
- Abachi P.T (2013) “The Economic Cost of Fiscal Centralization on the Growth of the Nigerian Economy” *Scottish Journal of Arts, Social Sciences and Scientific Studies* Vol. 9 Issue 1
- Agu C. (2010), “Domestic Macroeconomic Policies and Capital Flight from Nigeria: Evidence from a Macro-Economic Model” *CBN Economic and Financial Review*, 48(3): 49-90.
- Akanbi, O.A., Du Toit, C.B (2010) “Macro-Econometric Modeling for the Nigerian Economy: A Growth–Poverty Gap Analysis” [www.elsevier.com/locate/ecmod](http://www.elsevier.com/locate/ecmod)
- Dauda R. K (2009) “The Effects of Exchange Rate on the Trade Balance of Sierra Leone: A Simulation Approach” in Adeola A, Dipo B and Olofin S (Ed) *Applied Econometrics and Macro econometric Modeling in Nigeria* Ibadan University Press, Ibadan
- Enang B.U (2009), “A Dynamic Macro-Economic Model of the Nigerian Economy with Emphasis on the Monetary Sector” *SAJEMS* Vol.12 No. 1
- Garba, A. G (2008) “Strategic Management of Nigeria’s Natural Resources for Sustainable Development” Paper Presented at *NISER Symposium* in Honour of Professor H, M Onitiri, at NIIA.
- Garba, A. G (2004) “Who Controls, can Control and Should Control the Oil and Gas Resources in the Niger Delta?” *Mimeo*
- Johnson J, and J. Ninardo, (1997) *Econometrics Methods* Fourth Edition; McGraw-Hill
- Oduh M.O. , Nwosu E. O and Urama N.E (2012), “Macro-Economic Models and the Challenge of Growth in African Economies: The Context” *Journal of Economics and Sustainable Development* Vol3. No. 10

Ojo O. (1973), "A Medium- Term Planning Model of the Nigerian Economy" *Journal of Economics and Social Studies* 15: 80-86

Olofin S. O (1985) *Modeling Nigeria's Economic Development* Ibadan University Press, Ibadan

Olofin S. O and Poloamina P. (1984) "The Revised CEAR- MAC 1V Macro Econometrics Model of the Nigerian Economy" Ibadan, *Centre for Economic and Allied Research*

Olu Ajakaige (1999), "Macroeconomic Effects of VAT in Nigeria: A Computable General Equilibrium Analysis" *AERC Research Paper* 92

Palanivel T and Klein R. (1999) "An Econometric Model for India with Emphasis on the Monetary Sector" *The Development Economics* Vol. 37 No.3

Soludo C. C (1998) *Macro Economic Policy Modeling of African Economies* Enugu, ACENA Publications

Uche C. U and Ogbonnaya C. U (2004) "Oil and the Politics of Revenue Allocation in Nigeria" *African Studies Centre* Leiden, The Netherlands. *ACS Working Paper* No 54

Uwujaren G.P (1977) "Specification and Estimation of an Economy-Wide Macroeconomic Model for Nigeria" *Journal of Economic and Social Studies* Vol. 19

* MS	Eq 42 PC = - 235486 - 0.19 * NGDP - 0.53 * PC (-1) + 43781 * CPI - 0.013 * EXB + 23.20 * GES - 3.42 * TFXR + 3.06							
	(-1.42)	(-0.76)	(-3.45)	(3.61)	(-0.052)	(2.79)	(-5.18)	(9.64)
	R <sup>2</sup> = 0.95			R <sup>-2</sup> = 0.93		DW = 2.0		
*EXB	Eq 43 GCE = - 118883 + 0.23*OIR + 42410*CPI- 0.034*GCE (-1) - 0.91* TFXR + 17.11*GES - 0.085 * NOIR - 0.19							
	(-0.92)	(0.31)	(3.85)	(-0.15)	(-1.77)	(2.36)	(-0.35)	(-0.83)
	R <sup>2</sup> = 0.98		R <sup>-2</sup> = 0.97		DW = 1.7			
0.014* KE	Eq 44 GFCF = -36321 + 0.17*RGDP + 2608 *OPEN + 1143 *CPI + 1043* EXR + 0.301*GFCF (-1) + 0.33 *CPF -							
	(-0.58)	(0.56)	(0.38)	(0.91)	(2.21)	(0.98)	(0.60)	(-0.15)
	R <sup>2</sup> = 0.99		R <sup>-2</sup> = 0.98		DW = 2.17			
	Eq 45 AD = 83544 + 1.17 * PC + 0.50* GCE (-1) + 5.57 * GFCF - 1.19 * GES							
	(0.65)	(16.7)	(2.89)	(2.56)	(-0.23)			
	R <sup>2</sup> = 0.99		R <sup>-2</sup> = 0.99		DW = 1.5			
	Eq 46 OIR = 31203 - 6.90e-07 * PPT + 1.70e-06 *OTH							
	(0.29)	(-2.60)	(12.3)					
	R <sup>2</sup> = 0.93		R <sup>-2</sup> = 0.92		DW = 1.0			
	Eq 47 NOIR = 94572 + 7.48e-06 * CIT - 2.56e-06 * CEO + 6.57e-06 * FIR							
	(0.81)	(2.62)	(-2.54)	(2.59)				
	R <sup>2</sup> = 0.69		R <sup>-2</sup> = 0.66		DW = 2.1			
	Eq 48 RE = - 25882+ 0.16 * OIR + 0.134 * NOIR + 0.05 * EXB + 746 * EXR + 2.33 * GRES							
	(-1.91)	(3.07)	(3.99)	(1.50)	(0.74)	(2.23)		
	R <sup>2</sup> = 0.99		R <sup>-2</sup> = 0.99		DW = 1.8			
	Eq 49 KE = 26498 - 0.044 *OIR + 0.091 *NOIR - 0.036 *EXB + 3038 *CPI + 0.428 *KE (-1) - 0.26 *RGDPOG +							
	(0.21)	(-0.31)	(2.81)	(-1.14)	(1.86)	(1.63)	(-0.15)	
	0.002 *TFXR + 2.56 *GKES							
	(0.02)	(0.85)						
	R <sup>2</sup> = 0.96		R <sup>-2</sup> = 0.94		DW = 2.4			
	Eq 50 CPI = 0.46 + 1.02e-06 * MS + 0.14 * EXR + 9.26e-06 * OIR + 0.98 * CPI (-1) + 3.30e-06 * NOIR							
	(0.45)	(0.31)	(3.26)	(2.02)	(16.3)	(1.18)		
	R <sup>2</sup> = 0.99		R <sup>-2</sup> = 0.99		DW = 1.19			
MMG	Eq 51 RGDPOG = 53225 + 22 * LAOG + 0.006 * GCE + 0.018 * MKG + 0.20 * RGDPOG (-1) + 0.16 * FIID - 0.04 *							
	(-1.72)	(5.72)	(1.32)	(2.83)	(1.26)	(1.53)		(1.40)
	R <sup>2</sup> = 0.86		R <sup>-2</sup> = 0.82		DW = 1.6			
0.15*FIID	Eq 52 RGDPA = 10360 + 298.8*LAG - 0.052*KE + 0.008*MKG + 0.053*MMG -178.6*INF + 0.42*RGDPA (-1) -							
	(0.02)	(0.52)	(1.01)	(0.22)	(1.02)	(1.02)	(0.22)	(0.22)

### APPENDIX 1: Summary of Estimated Equations

**Appendix 1 Continue**

Eq 53  $RGDPM = -3834 + 108.2 * LMA - 0.0015 * GCE + 0.0002 * MKG + 0.005 * MRG + 15.42 * CPI + 0.065 * RGDPA$   
 (-1.76) (4.90) (-4.91) (0.15) (0.53) (0.51) (5.38)

$-0.04 * RGDPOG + 61.8 * CU$   
 (-1.33) (3.24)

$R^2 = 0.97 \quad R^{-2} = 0.96 \quad DW = 2.4$

Eq 54  $CU = 42.6 - 7.50e-06 * MKG - 6.70e-06 * MRG - 0.00033 * RGDPOG - 0.00022 * RGDPA + 0.0032 * RGDPM$   
 (2.93) (-0.58) (-0.12) (-2.34) (-1.36) (2.98)

$+ 0.00022 * GES$   
 (2.5)

$R^2 = 0.52 \quad R^{-2} = 0.38 \quad DW = 1.14$

Eq 55  $MD = -119067 + 0.26 * NGDP + 1413 * INF - 7873 * EXR + 1.81 * KE$   
 (-0.75) (7.16) (0.33) (-2.72) (2.44)

$R^2 = 0.97 \quad R^{-2} = 0.96 \quad DW = 0.8$

Eq 56  $MS = -254625 + 0.30 * NGDP + 4886 * INF + 3.11 * KE - 9.19 * FIID$   
 (-1.60) (5.10) (1.02) (3.27) (-2.0)

$R^2 = 0.97 \quad R^{-2} = 0.96 \quad DW = 0.70$

Eq 57  $EXR = 5.35 + 8.84 * OPEN - 0.017 * TOT - 3.15e-06 * MS - 4.70e-06 * TFXR$   
 (0.30) (4.88) (-0.14) (-0.28) (-0.42)

$R^2 = 0.82 \quad R^{-2} = 0.79 \quad DW = 0.63$

Eq 58  $OLX = 6233 + 0.85 * OQT - 219.5 * OPR$   
 (0.20) (17.4) (-0.61)

$R^2 = 0.94 \quad R^{-2} = 0.93 \quad DW = 1.30$

Eq 59  $NOIX = -65710 + 0.31 * RGDP + 0.004 * TFXR + 0.24 * NOIX (-1) - 1473.5 * OPEN$   
 (-4.20) (4.37) (1.23) (1.28) (-1.09)

$R^2 = 0.96 \quad R^{-2} = 0.96 \quad DW = 1.63$

Eq 60  $MKG = -56568 + 5.63 * RGDP - 2159 * EXR - 0.09 * TFXR + 91240 * OPEN - 15.60 * RGDPOG - 0.55 * MKG (-1)$   
 (-0.23) (3.92) (-1.36) (-1.40) (4.80) (-3.45) (-3.32)

$R^2 = 0.96 \quad R^{-2} = 0.95 \quad DW = 2.0$

Eq 61  $MRG = -64721 + 0.44 * RGDP + 37.31 * CU - 373 * EXR + 0.009 * TFXR + 16773 * OPEN - 0.48 * MT - 2.25 * RGDPM$   
 (-0.86) (1.16) (0.04) (-0.76) (0.57) (3.2) (-0.88)  
 (-0.30)

$R^2 = 0.97 \quad R^{-2} = 0.96 \quad DW = 1.30$

Eq 62  $MMG = -380588 + 1.72 * RGDP + 1011.12 * CU - 2764 * EXR + 25781 * OPEN - 0.85 * MT - 1.62 * RGDPM + 0.22 * TFXR$

(-1.66) (1.46) (0.33) (-1.83) (1.61) (-0.50) (-0.07) (4.85)

$R^2 = 0.98 \quad R^{-2} = 0.97 \quad DW = 1.9$

**Appendix**

**APPENDIX 2: Significance<sup>2</sup> of Variables from the Model**

Equations/Variables	Variables significant at 5% and 10%	Variables not Significant
Eq. 42 Private Consumption Expenditure (PC)	PC (-1), CPI, GES, TFXR, MS	NGDP, EXB
Eq 43 Government Consumption Expenditure (GCE)	CPI, GES	OIR, GCE (-1), TFXR, NOIR, EXB
Eq. 44 Gross Fixed Capital Formation (GFCF)	EXR,	RGDP, OPEN, CPI, GFCF(-1) CPF, KE
Eq. 45 Aggregate Demand (AD)	PC, GCE (-1), GFCF	GES
Eq. 46 Oil Revenue (OIR)	PPT, OTH	
Eq 47 None-Oil Revenue (NOIR)	CIT, CEO, FIR	
Eq 48 Government Recurrent Expenditure (RE)	OIR, NOIR, GRES	EXB, EXR
Eq 49 Government Capital Expenditure (KE)	NOIR,	OIR, EXB, CPI, KE(-1), RGDP, TFXR, GKES
Eq 50 Consumer Price Index (CPI)	EXR, OIR, CPI(-1)	MS, NOIR
Eq 51 Real Output in Oil and Gas (RGDPOG)	GCE,	LAOG, MKG, RGDP, (-1), FIID, MMG
Eq 52 Real Output in Agriculture (RGDPA)	LAG, RGDPA (-1)	KE, MKG, MMG, INF, FIID
Eq 53 Real Output in Manufacturing (RGDPM)	LMA, GCE, RGDPA, CU	MKG, MRG, CPI, RGDP
Eq 54 Capacity Utilization (CU)	RGDP, RGDPM, GES	MKG, MRG, RGDPA,
Eq 55 Demand for Money (MD)	NGDP, EXR, KE	INF
Eq 56 Supply of Money (MS)	NGDP, KE, FIID	INF
Eq 57 Exchange Rate (EXR)	OPEN	TOT, MS, TFXR
Eq 58 Crude Oil Export (OLX)	OQT	OPR
Eq 59 None-Oil Export (NOIX)	RGDP	TFXR, NOIX (-1), OPEN
Eq 60 Import of Capital Goods (MKG)	RGDP, OPEN, RGDPOG, MKG (-1)	EXR, TFXR,
Eq 61 Import of Raw Materials (MRG)	OPEN	RGDP, CU, EXR, TFXR, MT, RGDPM
Eq 62 Import of Manufactured Goods (MMG)	TFXR	RGDP, CU, EXR, OPEN, MT, RGDPM
Eq 63 Total Imports (TOM)	MRG, MO	MKG, MMG

Source: Appendix 1

<sup>2</sup> The significant test in this study uses the rule of thumb:  $t \geq 2$

APPENDIX 3. Figure 1: Deterministic- Dynamic Simulation (Actual and Simulated)

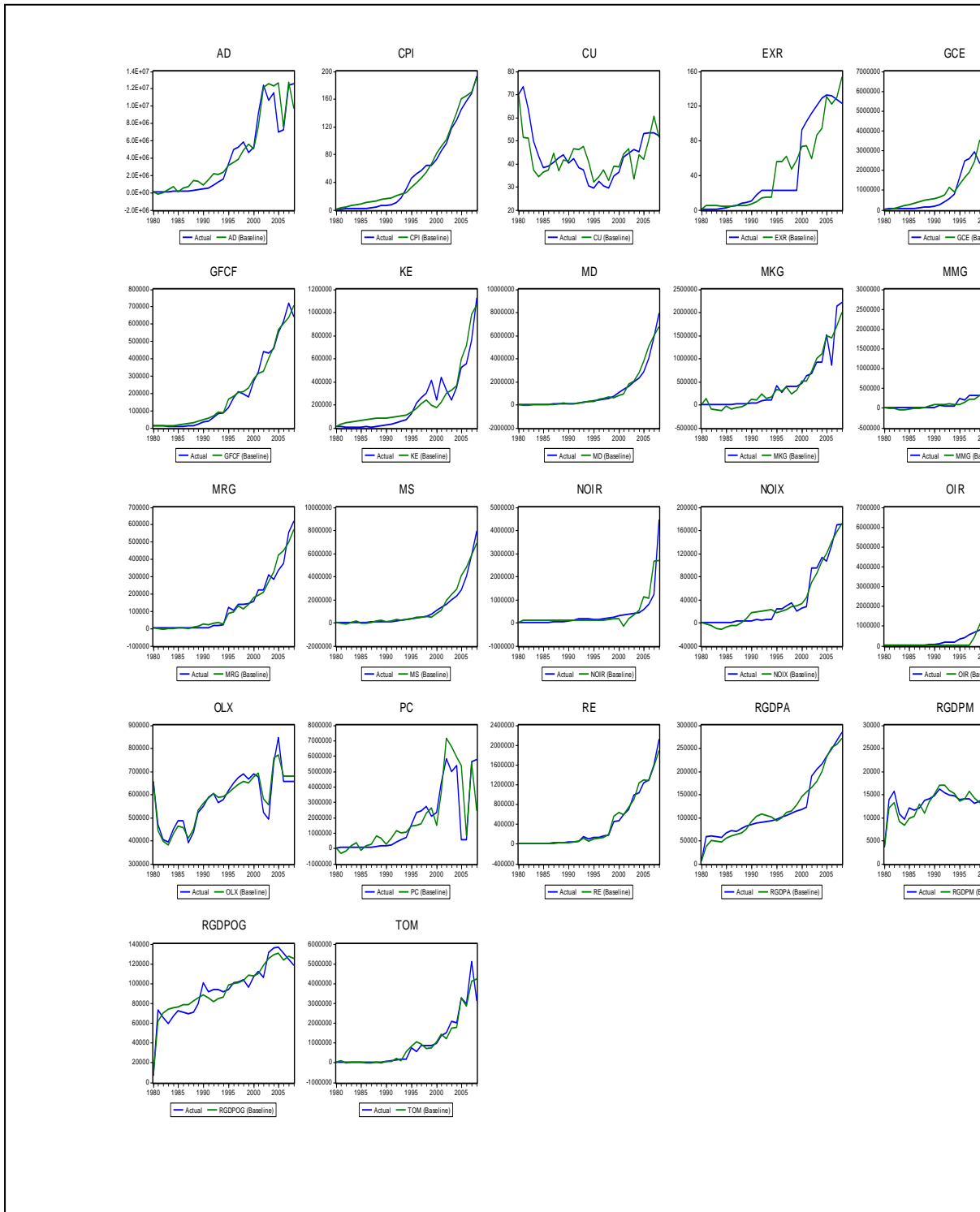
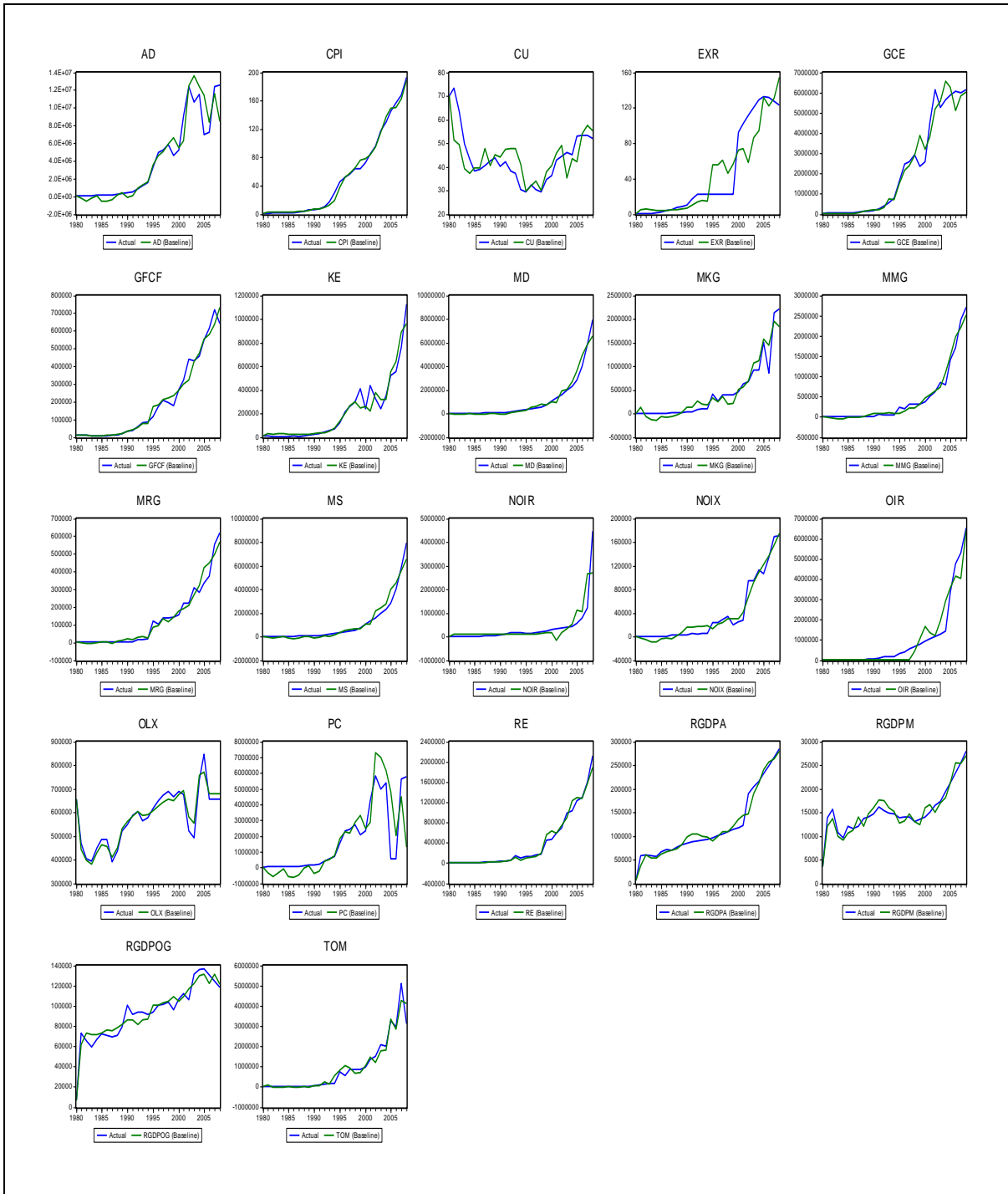
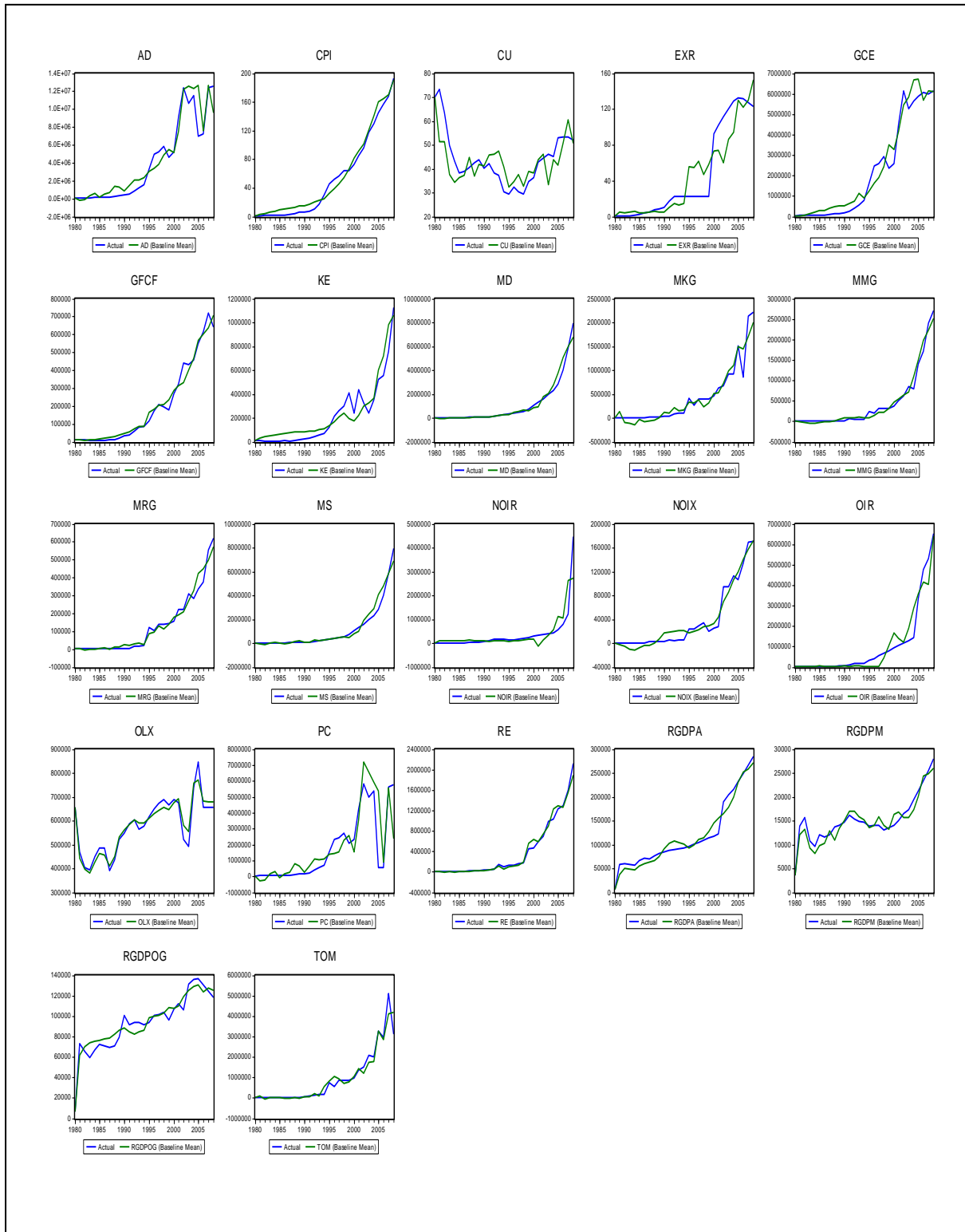


Figure 2: Deterministic- Static; Simulation (Actual and Simulated)







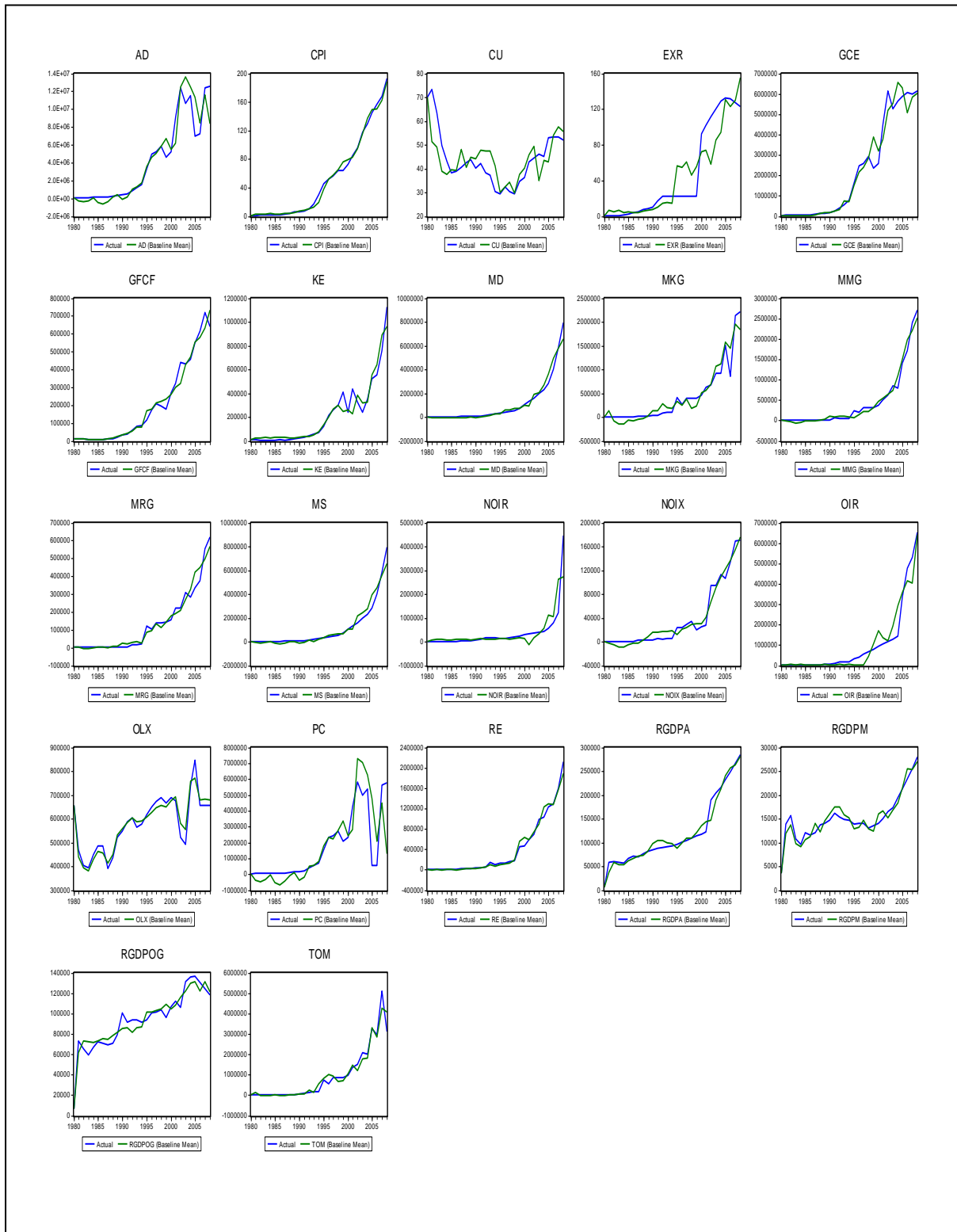
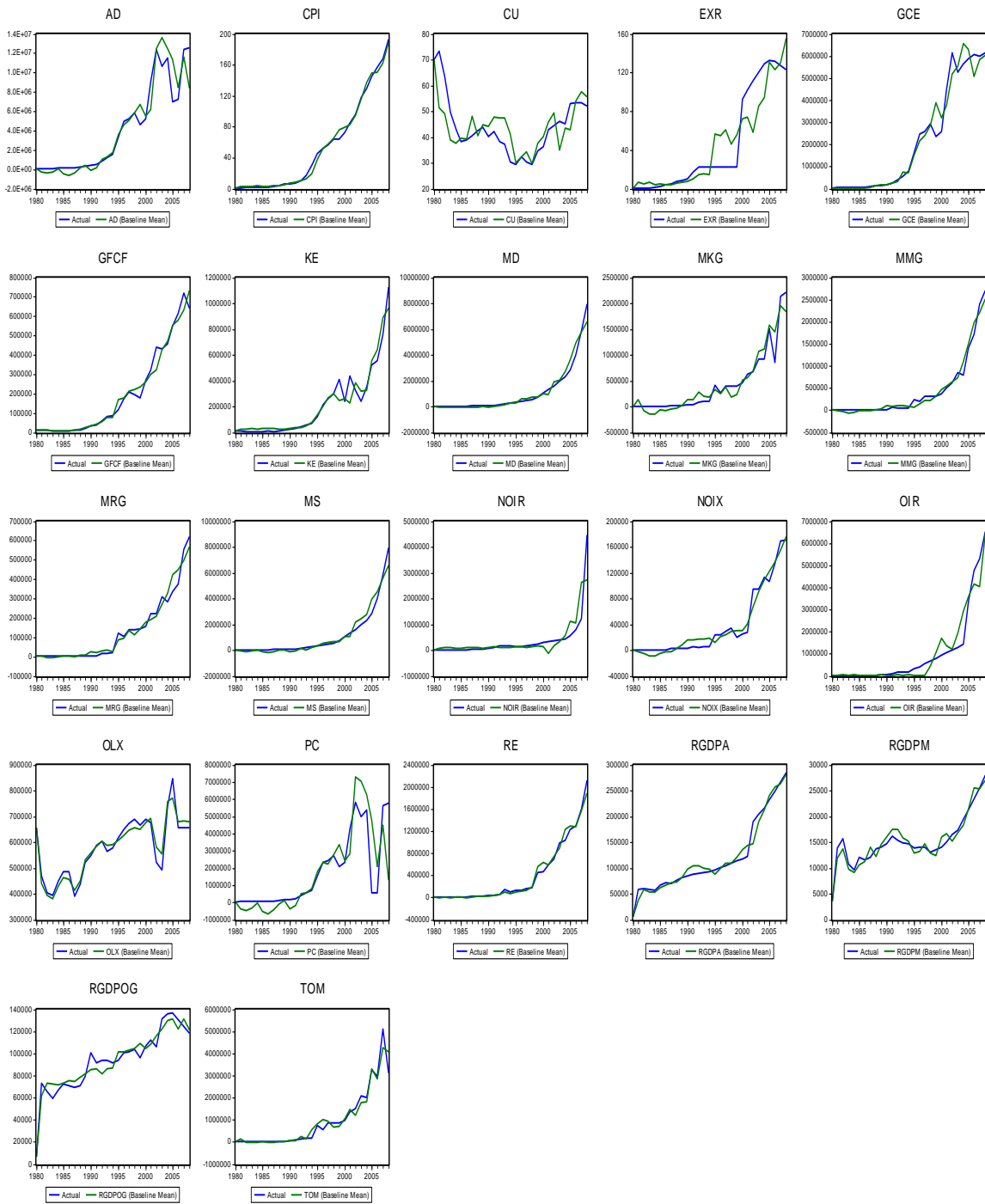


Figure 4: Stochastic Static Simulation (Actual and simulated)



*The role of People's participation,  
monitoring and evaluation in the  
successful implementation of Niger Delta  
Development Commission (NDDC)  
projects in selected communities in Imo  
State.*

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**Abstract:**

Niger Delta Development Commission (NDDC) is a Commission set up by the Federal Government of Nigeria in 2000 by the former President Chief Olusegun Aremu Obasanjo with a mandate to appease the oil producing communities. The NDDC was formed to “facilitating the rapid, even and sustainable development of the Niger Delta into a region that is economically prosperous, socially stable, ecologically regenerative and politically peaceful” as stated in the NDDC master plan. It is in line with these directives that the commission embarked on lots of public utility projects and empowerments to actualize these set objectives. The communities still complain of inadequate basic public utilities which are supposed to be provided by NDDC. The issue of participation, monitoring and evaluation has become a global approach to most programmes and projects to ensure the success of such projects. But the issue of people's participation, monitoring and evaluation has not been fully incorporated in most developmental projects in Nigeria. The study tries to understand the level of community participation, monitoring and evaluation in the implementation of water, electricity and road projects sponsored by the Niger Delta Development Commission (NDDC) in the selected communities of Obowo, Oguta and Ohaji/Egbema communities in Imo State Nigeria, utilizing data from both primary and secondary sources. Out of 298 participants, 63.2% said their communities were not contacted before these projects were started, while 58.6% said that the projects were not monitored and evaluated. The study concludes that there were low community participation, monitoring and evaluation in NDDC projects and if at all there were in some locations as the data shows, it was very low and insignificant. Based on the findings, the study also concludes that people's participation is a necessary condition but not a sufficient

condition in the successful implementation of some public utility projects. The study recommends that though some of the projects were successfully constructed and are operational despite the fact that there were no adequate participation, monitoring and evaluation, full involvement of the communities in NDDC projects would definitely enhance the successful implementation of these projects and help to ensure the maintenance of the approved standard and best conditions of the project practice.

**Key word:** participation, monitoring, evaluation, Niger Delta Development Commission, projects, communities.

## 1 Introduction

Conventionally, participation in the process of development is a corner stone to achieving a viable development. In some continent of the world, development process is handled mostly at the top levels while the people at the bottom are sidelined. Even though the people at the bottom are the so called beneficiaries, they hardly are involved in the process of initiation, implementation, monitoring and evaluation of projects. Participation can be “top – bottom “ or bottom – up “ in approach and the relevance of bottom – up made African Development Bank (ADB) in the Bank’s Vision statement (1999) adopted “a bottom-up participatory approach” and a “client-responsive approach to ensure stakeholder commitment and ownership” considering the significance of these approaches. The bank emphasized the need that “all stakeholders, including targeted beneficiaries of civil society, the donor community and borrower countries are involved from the outset of program design through to implementation”. This goes on to explain the importance of participation in programme implementation. This study therefore explored the role of people’s participation, monitoring and evaluation on the successful implementation of these projects. Studies have supported the role of communities in development processes. From a political science perspective, (Parry’s 1992) instrumentalist theory suggests that individuals will participate if this action protects their interests with the minimum of costs and the maximum of benefits; in contrast, communitarian theory posits that the decision to participate is not just based upon benefits to the individual but also to the community of which the individual is part.

According to (ADB 2001) participation in development mean “the process through which people with an interest (stakeholders) influence and share control over development initiatives and the decisions and resources that affect them”. For effective and purpose driven community development, the identification of the relevant communities as the primary stakeholders is very important, engage them in discussions and get their ideas and contributions to the planning and decision-making, contribute to their capacity-building, and ultimately empower them to initiate, manage and control their own self-development.

Hence (ADB 2001) in defining stakeholders went further to identify the primary and secondary stakeholders in a program. Stakeholders are seen as people or communities who may be affected or be affected by the outcome of projects or programs. The effects and involvement here could be directly or indirectly and positively or negatively. Primary stakeholders are the beneficiaries of a developmental intervention or those directly affected (positively or negatively) by this intervention while Secondary stakeholders are those who influence a development intervention or are indirectly affected by it.

(Danny Burns et al 2004, Aref et al 2010), see community participation to mean the engagement and offering of opportunities to individuals and communities in decisions about things that affect their lives. It must be in mind here that some factors affects the level of participation and may involve willingness of the community to participate, the willingness of

the external stakeholders like government and financiers to involve the community, the level of education and the political situation in such communities. These factors manifested greatly in the Niger Delta Development Commissions projects in the communities under this study. There have been much literature on projects participation, monitoring and evaluation in community development and to the best of my knowledge there have not been empirical studies on the individual and community involvement, monitoring and evaluation in the implementation of the NDDC projects. This objective is strengthened by lots of these projects poorly executed or in some cases abandoned by the contractors.

The paper is organized as follows: Part one is the introduction, followed by relevant literatures reviewed, the third part is the methodology, analysis of findings and lastly, the conclusion.

## **2 Literature review**

### **The Role of People's Participation in Project Success.**

There have been variations in opinions and literature on the role of participation in project success (Venda Louise Pollock and Joanne Sharp 2012). But the complexity of the issues depends on the writer and the circumstances. "A critical literature has emerged around the notion that participation has become a new 'tyranny' that, despite its claims, is often little more than tokenism (Cooke and Kothari, 2001). The position is that the state is now over stressing the citizens by subjecting them to functions and duties which may not ordinarily be their concerns "positioning of the community at the forefront of urban regeneration policy constitutes the medium through which the state continues to represent, problematise and intervene in the lives of citizens".

Contrary to the opinion of (Cooke and Kothari, 2001), (Mckee and Cooper 2008) argued that the state does not allow the communities to fashion their own life style and growth, rather institutionalize the governmental objectives through the implementation of participation and empowerment. They suggested that "rather than allow communities to forge their own direction, however, the various mechanisms by which they are engaged and empowered often encourage alignment with institutional and government objectives and a demarcation of local interests not driven by communities themselves, and thereby such means act as a "mode of subjection and means of regulating conduct".

Also, sociocultural lifestyle is said to affect project participation, monitoring and evaluation. The role of sociocultural lifestyle has been mentioned by (Jonathan Mathers et al. 2008). Some residents try to avoid the gaze of the state, because for these residents, the attention of the state can be dangerous. This is why some residents deliberately resist foreign developments and refuse to participate actively in such projects once they perceive the fear that it is going to affect their cultural, economic and environmental well-being. Gender plays a role to restrain women from active participation. This is why some women do not participate in some projects due to religious belief and cultural practices that women do not come out to sit with men to discuss issues even when it concerns them most.

According to (Priyam Das 2014) despite the women access to water supply and financial compensation which invariably motivate women's participation in Madhya Pradesh, India, individual- and community-level socioeconomic and sociocultural factors forms a constrain to these motivations and ability to participate, hence it is very important to consider sociocultural, economic and environmental factors in people's participation. This provides a good understanding of the gap and motivations in participation, and explains the idea of demand – driven push for participation.

This issue was also emphasized by (Meinzen-Dick and Zwarteveen 1998 and Ray 2007) in their various studies that the cultural and social norms in any community may be a determining factor in the level of participation by women. These studies are relevant in the current research as the socio-cultural, economic, political and security situation in the Ohaji/Egbema, Oguta and Obowo communities in Imo State necessitates the full involvement of the communities for smooth implementation of the projects. All the same going by history and interview of the few community members, the cultural and socio-economic characteristics prevalent in these communities under study have embedded the act of participation in the local communities and organizations for effective communal work even before the theories of community participation were formulated.

In the study on the degree of consensus and conflict among the stakeholders in community project and participation in Hong Kong (Terry H.Y. Li et al 2012), observed that different group among the stakeholders has varying interest in the public infrastructure constructions, hence supported the argument on reasons for participation. To them the public in Hong Kong pays more attention to thoughtful and comprehensive planning processes in order to achieve balanced and mixed land use while the Government officials were interested more on the economic benefits. On the other hand the pressure groups were also more concerned on the adoption and observance of the green technology principles as well as value for money and People affected by the project require adequate compensation and a reasonable relocation plan to cover their associated losses.

From these statements, one can see the divergence in interest of participants in the projects and the peaceful discussion and resolution of these are very important for the successful project participation. This study is relevant to the location of study as there has been continued conflict of interest among the stakeholders and even the contractors and these have not been successfully resolved leading to the youth's aggressiveness, hostage takings, kidnappings and at times killings coupled with increase in oil bunkering. The cases of project abandonment in the study area can be traced to not only non-payment of the contractors but the divergence in the interest of NDDC officials and stakeholders as explained by the participants in the survey.

Community association can play a vital role in community development projects. This was mentioned by the study of (David Luckin and Liz Sharp 2004) (HM Treasury, 2002; DETR, 2001; Home Office, 2002), "community sector organizations" has their impacts in rural governance networks in ensuring that interest of the people are reasonably represented in developmental policy issues in United Kingdom and such interest motivates the people to participate in such developmental projects.. However, the views that community organizations can represent the wishes and interest of local community in policy issues should be viewed with caution so as not to commit the error of generalization. The issue of generalization of this sort of representation manifests continually in the Niger Delta Region.

The non- acceptability of organizational representation has led to lots of inter communal conflicts in the region. Each community wants to have their representatives participate in the general discussions with government officials, NDDC and oil companies in issues concerning them so that they would be able to present the views, sufferings, projects and articulated remedies of their own communities. This was much pronounced in the various attempts by the oil companies to pay compensations to the communities affected seriously by the oil spillage, gas flaring and other environmental destructions due to the activities of the oil explorations. The oil companies prefer to work through mediators who in turn exploit the

communities affected by paying them peanuts despite the fact that the oil companies had released greater amount of money for the compensation.

Despite the arguments presented by (Cooke & Kothari, 2001 and Mckee& Cooper 2008) , the issues of “bottom – up” and “Up- down” approaches in community development are still relevant and debatable and each approach depends on the community in question, the level of awareness and their ability to conceptualize and design their own projects and programmes. The two approaches make room for community participation and this in turn talks about not only participation but empowerment and sustainability. Talking on empowerment (Gonzalo Lizarralde and Mark Massyn 2008:1) explained empowerment to represents ‘the highest level of participation’ in which community members demonstrate actual control of the project and influence the process and outcomes of development”. The issue and question becomes “at what level(s) of the projects are the peoples participation mostly needed”? This question is relevant in this study because it was observed that at some levels the communities’ input on the projects were not necessary for the project to continue successfully. Such areas include the highly technical and specialized aspects of the projects.

Most rural communities including the location of study may not know the technical know-how in designing the projects, the implementation and even monitoring and evaluation. Like the construction of public utility projects like roads water and electricity are highly technical and needs experts, so the communities has little or nothing to put in the designing which includes the technical drawings, the sourcing of funds for the projects, the implementation of the contracts, monitoring and evaluation. The community can go to sleep and just wait for the completion of these utility projects so that they start enjoying them. This then explains why the author feels that community participation in some projects has limitations.

### **Project Monitoring and Evaluation**

Approaches to project monitoring and evaluation have been suggested by researchers in the field of community development. While examining the existing monitoring and evaluation methods applied in community economic development (CED) (Armstrong H. W., B. Kehrer, P. Wells and A. M. Wood 2001), said that “top–down” techniques seek to estimate ‘global’ impacts (for example, aggregate GDP increases, or employment), whereas the ‘bottom–up’ techniques proceed by identifying microeconomic impacts on individuals and firms. The ‘micro’ impacts are then aggregated to give global effects”. It has been in literature that the traditional evaluation method originated from the top – down approach ((Moore and Rhodes, 1973) and in recent times uses macroeconomic models for regression analysis while on the other hand the Bottom-up approach uses information received directly from the beneficiaries or the affected people. According to The New South Wales (NSW) Natural Resources Monitoring, Evaluation and Reporting Strategy 2010–2015 MER Strategy), monitoring, evaluation and reporting provides decision-makers with timely information that can be implied in learning and understanding successes and failures and also use such information to adapt or replace strategies and policies in their programs so as to achieve the desired goals and objectives. Monitoring addresses the evaluation questions in projects and programs and describes the situations over the period and data collected may be in mixed qualitative and quantitative (Department of Environment, Climate Change and Water (DECCW) 2009).

Monitoring goes with evaluation as the monitored projects process has to be evaluated for the monitoring to be meaningful. Evaluation is a systematic and evidence-based review of the appropriateness, efficiency and/or effectiveness of programs or projects, attempting to explain why a particular outcome has occurred, how well a program or activity was

undertaken, whether it was a good thing to do, and what should be done in the future in light of the evaluation findings (DECC 2009).

Similarly, (World Bank operational Evaluation Department 1996), emphasized that while monitoring is an ongoing process of data capture and analysis of a project for the purpose of control; evaluation is a periodic process of assessment for the purpose of learning the progress on the project or intervention. A further clear cut explanation is that while monitoring has an internally focused purpose of management-driven concentrating on the efficiency of the project, evaluation on the other hand has the primary interest of focusing on the desires and expectations of the external stakeholder-driven on the effectiveness of the project. Therefore in preparing the monitoring and evaluation reports, the understanding of the group for which the reports are to be presented is of vital importance so as to make it effectively and comprehensively relevant. Empirically, (Hassan Lone G. 2013) examined the need and importance of Monitoring and Evaluation as a vital component of the whole project cycle with main emphasis on the Resettlement and Rehabilitation aspects of the project in Qazigund Kulgam Road Subproject in Kashmir India and their study was used to emphasize that proper monitoring helps in reducing the grievances of the people affected in projects implementation as project officers monitor and evaluate these obstacles to be able to manage the projects in achieving the desired plan and objective(s).

This issue of effective monitoring system and variations were also viewed by (Saad H. Al-Jibouri 2003), that it dictates variations in planned cost and performance in project handling. Monitoring and evaluation process is a method of promoting smooth transition between the design, implementation and evaluation phases of the project cycle and ensure alignment of the performance measures with the project strategy (Paul Crawford & Paul Bryce (2003). The application of this monitoring and evaluation process would have been able to really educate and inform the people of Ohaji/Egbema, Oguta and Obowo and all stakeholders on the progress reports and problems encountered in the execution of the roads, water and electricity projects to make room for adjustments and continuation of the projects instead of the contractors abandoning them. To (Reza Aliverdi et al 2013) the application of statistical quality control chart in monitoring project duration and deviation cost and indices is of importance and that though monitoring and analyzing project performance using several indices such as schedule performance index and cost performance index, earned value technique is quite capable but there is a lack of study regarding an integrated approach composed of earned value (EV) and statistical quality control charts. They concluded that the proposed approach improves substantially the project controlling scheme and enhances the capability of earned value technique.

In another development, (Robert C. Mahaney and Albert L. Ledere 2010) using the “agency theory” explained the objectives of monitoring is collecting three main classes of information about the progress of a project and these are; information that the project is progressing within acceptable budget, schedule, and quality expectations; supports decisions to approve the movement of the project through its stages; and confirmation of the abstract assessments that benefits will be realized at the end of the project. Monitoring through planning and meeting tends to reduce the incidence of project staff evading duty (shirking) and evading duty may prove doom to project success, hence effective monitoring would help to encourage developers to concentrate on the objectives and guidelines for the successful implementation of projects. Monitoring the activities of the contractors for community development projects would ensure that conditions strictly spelt out in the contract agreement are observed to justify all the inputs into such projects. Also (Mario Vanhoucke 2012) explained that details obtained during the baseline plan period schedule risk analysis (SRA)



and an earned value management (EVM) would be able to inform the project manager to improve the project control process and corrective action decision making process so as to achieve the desired goal of the project.

### 3 Methodology

This study used cross-sectional design in collecting information which means that the information was collected at one point in time (Creswell 2003). According to (Onwuegbuzie & Collins 2007: 290) “The qualitative and quantitative phases of the study occur at approximately the same point in time such that they are independent of one another (i.e., concurrent)”. Also in this study, questionnaires, observation, in-depth unstructured interviews and documentary analysis were used; hence mixed method research was utilized (Creswell, J. W. 2009; Creswell, J. W., & Plano Clark, V.L. (2011).

Survey technique was utilized in the study and a total of 400 questionnaires were distributed in Obowo, Oguta and Ohaji/Egbema local Government communities in Imo state Nigeria, out of which 298 correctly filled questionnaires were used for the study. Face to face and telephone interviews were also used to acquire more of the relevant information necessary for meaningful analysis and result. A Parallel sampling technique was emphasized by (Onwuegbuzie & Collins 2007) and used in the study.

### Analysis and Findings

**Table 1.1 Were your community consulted before projects were selected and executed?**

	Frequency	percentage
Yes	<b>48</b>	<b>17.0</b>
No	<b>179</b>	<b>63.5</b>
Don't Know	<b>55</b>	<b>19.5</b>
Total	282	

**Table 1.2 Does NDDC evaluates and monitor projects after commissioning?**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	39	13.0	13.9
	No	164	54.7	58.6
	Don't Know	77	25.7	27.5
	Total	280	93.3	100.0
Missing	.00	20	6.7	
Total	300	100.0		

From the data it was observed that out of the 298 respondents, Males were 170 (57%) while females were 128 (43%). This explains that the ratio of male to female in the area under study is close and this explains why both male and female feature and are engaged in almost all activities in the communities like farming, petty trading and participation in community organizations.

Looking at (Tables 1.1 and 1.2) above, 179 (63.5%) participants indicated in their responses that their community were not consulted by NDDC before the projects were selected for execution, 48 (17.1%) indicated that they were consulted while 55 (19.6%) said they don't know.

On the question concerning project monitoring and evaluation by the staff of NDDC, 164 (58.6%) of respondents said NDDC does not monitor and evaluate their projects while 39 (13.9%) indicated that the projects were monitored and evaluated and 77 (27.5%) said they don't know. On rating the execution of projects by the commission in the area under study, 56 (20.1%) rated satisfactory, 79 (28.3%) rated it average, 119 (42.7%) rated it below average, while 25 (9.0%) rated it poor.

Also oral interviews were conducted on some randomly selected residents of the area under survey. The results from these oral interviews gave actual insight from the residents on the NDDC projects and were utilized by the researcher in writing the findings and conclusion.

**Table 1.3 How can you rate the execution of the projects?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Satisfactory	56	18.7	20.1	20.1
	Average	79	26.3	28.3	48.4
	Below Average	119	39.7	42.7	91.0
	Poor	25	8.3	9.0	100.0
	Total	279	93.0	100.0	
Missing	.00	21	7.0		
Total		300	100.0		

From these data, the researcher discovered that NDDC did not involve the communities actively in the execution of these public utility projects on roads, water and electricity as higher percentage of 63.2% said their communities were not involved. Some community members interviewed on why there was no consultation, attributed it to non-experience on the part of NDDC staff and management, a calculated design to keep the communities out of the contract cost, sharp practices, (as it was discovered some of the contracts were awarded to family members without experiences and to compensate some friends and party members), the contractors background in terms of experience and other personal reasons as a cover up.

Despite some of the problems of the NDDC projects in terms of implementation, monitoring and evaluation in some communities under study, the people were very curious to have these projects as it would help to improve their life and develop their communities, hence they were silent on the negative effects of the projects which in any way were minimal and communities were ready to fully participate in the projects.

Also 58.6% said there were no monitoring and evaluation by NDDC staff and members of the communities, while 13.9% of the respondents accepted that there were monitoring and evaluation of the projects, which makes one to conclude that the “top-bottom” approach was adopted.

. In the same vein, only total of 51.7% (42.7% + 9.0%) rated the projects below average and poor while 48.4% (20.1% + 28.3%) rated then satisfactory and averagely satisfactory.

The rating here depended much on the level of exposure of the participants. As a rural community, some of them have not been opportune to see similar projects so as to be able to compare and contrast these projects; hence someone who has been moving on untarred and muddy roads for years would rate any tarred road in their community high even though it is below acceptable standards in the cities.

Also there were no reasonable involvement of the communities in the project monitoring and evaluation. The communities’ claimed that their non-involvement had a negative impact on the successful implementation of some of these projects, hence the poorly done jobs and lots of the projects abandoned by the contractors who refused to get back to site despite all warnings and threats by the commission and government. The study also discovered that the top-down approach in which less input and resources are obtained from the local community is the community development approach adopted by NDDC in these communities instead of the popular and participatory bottom – up approach.

Despite the generally believed impact of public participation in projects success and the communities’ support of this belief, there is no clear cut evidence that the non-involvement of the communities in these projects were reasons for the project failures rather there were higher indications that these projects were poorly done or abandoned due to sharp practices by the staff of the commission and mismanagement of funds. Some of the contractors abandoned the projects because the commission failed in their payment arrangements. Also the Presidential committee discovered that some of the contractors had received their full payments for the uncompleted and abandoned projects. “The Oronsanye-led Committee recommended dissolution of the board, and government accepted and effected it on 14 September 2011” (Davidson, 1992 and Olukayode, 2011). The general findings from this research is that NDDC have not actually focused on the master plan and have not impacted much on the life of these communities despite the huge amount that has been going to the Commission. This is consistent with results of similar studies (Davidson, 1992; and Olukayode, 2011).

In line with the findings too, it was discovered that some of the projects abandoned had been fully paid for by the Commission and the contractors smiled home with their full payments while the jobs were not completed. The issue of effectiveness of monitoring goes beyond profit and loss and must be able to actually show the actual stage by stage use of materials, variations and the overall picture of the project. Variations in NDDC projects from oral interviews from the communities indicated that it occurred due to neglects and sharp practices. The officials deliberately delay the implementation of these projects so that they can affect the review of contract sums to their benefits. It is of the author’s view that if these monitoring systems were adopted and utilized in the NDDC projects in the study area, there would not have been lots of projects abandoned and poorly completed or uncompleted.

Supporting the writer’s view, (Idumange 2011) wrote “Going down memory lane, Oboh disclosed how the project was first awarded in 2004 at the cost of N427 million and reviewed upward to the tune of N727 million in 2007 before it was recently increased to a whopping N1.4 billion to conform with the current reality”. Oboh regretted that the contractor had failed to comply with agreement on the project. With such information that the contractor

was not owed, the leader of the inspection team, Senator Manager was enraged and fired a salvo saying the project must be ready for commissioning by April this year. He also emphasised that the quality of the project must not be compromised in view of the new set date for delivery. Vanguard Newspapers, March 05, 2013) stated “President Goodluck Jonathan in Abuja said that the administration would end corruption; ensure probity and accountability in the Niger Delta Development Commission (NDDC). Jonathan made the promise when he received the report of the Presidential Monitoring Committee on the NDDC submitted at the State House by the Chairman, Chief Isaac Jemide. The report indicated that the NDDC abandoned many projects and engaged in unjustifiable astronomical variation of contract sums”. This raise the question of who paid them and why since they had not finished the contract nor has it been handed over to the Commission nor commissioned. This discovery goes on to explain the level of sharp practices, corruption and mismanagement of funds going on in the Commission and these reports are in line with the communities’ statements.

#### **4 Conclusions**

Since some of the successfully completed water and electricity projects are functional despite the fact that the communities were not actively involved, hence one can deduce that the non-involvement of the communities had little impact on the successful implementation of some NDDC public utility projects.

This indicates that the level of people’s participation in project success varies depending on the type of project. For the highly technical and specialized projects, the communities may have little to contribute hence their level of participation may have to be minimal. Therefore, this study would state that people’s participation is a necessary condition but not a sufficient condition for some public utility project success. The researcher is of the view that NDDC should re-evaluate their procedures of contract awards and involve the communities in the initial negotiations, implementation, monitoring and evaluation of these projects for maximum efficiency and actualization of the goals of all stakeholders. Active involvement of the communities would help greatly in checkmating the activities of the contractors and erase the issue of abandoned contracts since the youths as militant as they are would instill fears in the contractors to complete the work in record time and of high quality too or face the wrath of the youths. Also the monitoring and evaluation department of the Commission need to be more active and ensure their staff adhere strictly to ideas, methods and application of the internationally accepted standard of project monitoring and evaluation.

## Research References

Agarwal, B. (2010). Does women's proportional strength affect their participation? Governing local forests in South Asia. *World Development*, 38(1), 98–112.

Aliverdi Reza, Leila Moslemi Naeni & Amir Salehipour (2013). Monitoring project duration and cost in a construction project by applying statistical quality control charts. *International Journal of Project Management* 31 (2013) 411–423.

Al-Jibouri, Saad H. (2003). Monitoring systems and their effectiveness for project cost control in construction. *International Journal of Project Management* 21 (2003) 145–154.

Aref, F. (2010). Residents' Attitudes towards Tourism Impacts: A Case Study of Shiraz, Iran. *Tourism Analysis*, 15(2), 253-261.

Armstrong H.W., B. Kehrer, P. Wells and A.M. Wood(2002). The Evaluation of Community Economic Development Initiatives *Urban Studies*, Vol. 39, No. 3, 457–481, 2002.

Babbie, Earl (1992) *The Practice of Social Research*. Belmont, CA: Wadsworth, Inc.

Burns Danny, Frances Heywood, Marilyn Taylor, Pete Wilde and Mandy Wilson. Making community participation meaningful. A handbook for development and assessment The Policy Press Fourth Floor, Beacon House Bristol UK 2004. <http://www.jrf.org.uk/sites/files/jrf/jr163-community-participation-development.pdf> (Assessed 20 June, 2014).

Citizen Participation Handbook. People's Voice Project International Centre for Policy Studies. "iMedia" Ltd. August, 2002. Kyiv, Ukraine. <http://siteresources.worldbank.org/INTBELARUS/Resources/eng.pdf> (Assessed 20 June, 2014).

Crawford Paul & Paul Bryce (2003). Project monitoring and evaluation: a method for enhancing the efficiency and effectiveness of aid project implementation. *International Journal of Project Management* 21 (2003) 363–373.

Creswell, J. W., & Plano Clark, V.L. (2011). *Designing and conducting mixed methods research*. (2nd ed.). Thousand Oaks, CA: SAGE.

Creswell, J. W. (2009). *Research design: Qualitative, quantitative and mixed methods approaches* (3rd ed.). London: Sage.

Davidson, B (1992). *The Blackman's burden: African and the curse of nation-state*. Ibadan: Spectrum Books Ltd.

- DAS PRIYAM (2014). Women's Participation in Community-Level Water Governance in Urban India: The Gap Between Motivation and Ability. *World Development* Vol. 64, pp. 206–218, 2014.
- DECC 2009, *Evaluation Framework for CMA Natural Resource Management*, Department of Environment and Climate Change, Sydney, available at [www.environment.nsw.gov.au/4cmas/evalframework.htm](http://www.environment.nsw.gov.au/4cmas/evalframework.htm) (Assessed July 26<sup>th</sup>, 2014).
- DECCW 2009, *NSW State of the Environment 2009*, Department of Environment, Climate Change and Water, Sydney, available at [www.environment.nsw.gov.au/soe](http://www.environment.nsw.gov.au/soe). (Assessed July 26<sup>th</sup>, 2014).
- Eregha P.B. & Irughe I.R. (2009) Oil induced environmental degradation in the Nigeria Niger Delta: multiplier effects. In: *Journal of Sustainable Development in Africa* 11(4), 160-175.
- Gokhale, Hina & M. L. Bhatia (1999). A project planning and monitoring system for research projects. *International Journal of Project Management* Vol. 15, No. 3, pp. 159 – 163.
- Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis*, 11(3), 255–274.
- Handbook on Stakeholder Consultation and Participation in ADB Operations. African Development Bank (ADB) 2001. PP 1- 2.
- Hassan Lone G. (2013). Role of Monitoring and Evaluation in Successful Implementation of a Resettlement plane case study of Qazigund Kulgam Road Subproject in Kashmir. *International Journal of Current Research* Vol. 5, Issue, 04, pp.945-949, April, 2013.
- Idumange, John (2011). The Impact of Niger Delta Development Commission in the Eyes of the Ordinary Niger Delta People. [www.thenigerianvoice.com/nvnewsp/69436/1/pagemum/the-impact-of...8](http://www.thenigerianvoice.com/nvnewsp/69436/1/pagemum/the-impact-of...8) September 2011. (Assessed on 26th July 2014).
- Jorgensen, D. (1989). *Participant Observation: A methodology for human studies*. Applied Social Research Series, Volume 15. Newbury Park: Sage Publications.
- Kidder, L. H. (1981). Qualitative research and quasi-experimental frameworks. In M. B. Brewer & B. E. Collins (Eds.), *Scientific inquiry and the social sciences*. San Francisco: Jossey-Bass.
- Li Terry H.Y., S. Thomas Ng. and Martin Skitmore (2012). Conflict or consensus: An investigation of stakeholder concerns during the participation process of major infrastructure and construction projects in Hong Kong. *Habitat International* 36 (2012) 333e342.

- Lizarralde Gonzalo and Mark Massyn (2008). Unexpected negative outcomes of community participation in low-cost housing projects in South Africa. *Habitat International* 32 (2008) 1–14.
- Luckin David and Liz Sharp (2004). Remaking Local Governance through Community Participation? The Case of the UK Community Waste Sector. *Urban Studies*, Vol. 41, No. 8, 1485–1505, July 2004.
- Mahaney Robert C. & Albert L. Lederer (2010). The role of monitoring and shirking in information systems project management. *International Journal of Project Management* 28 (2010) 14–25.
- Mansuri, G., & Rao, V. (2013). *Localizing development: Does participation work?*. Washington, DC: The World Bank.
- Mathers Jonathan, Jayne Parry and Susan Jones (2008). Exploring Resident (Non-) participation in the UK New Deal for Communities Regeneration Programme. *Urban Studies*. 45(3) 591–606, March 2008.
- McKee, K. and Cooper, V. (2008) The paradox of tenant empowerment: regulatory and liberatory possibilities, *Housing, Theory and Society*, 25(2), pp. 132–146.
- Meinzen-Dick, R., & Zwartveen, M. (1998). Gendered participation in water management: Issues and illustrations from water users' associations in South Asia. *Agriculture and Human Values*, 15, 337–345.
- Moris, Jon and James Copestake (1993), *Qualitative enquiry for rural development*, London: ODI / IT Publications
- Onwuegbuzie, Anthony J., Nancy L. Leech and Kathleen M. T. Collins (2012). *The Qualitative Report* 2012 Volume 17, Article 56, 1-28.
- Onwuegbuzie, Anthony J. & Kathleen M. T. Collins (2007). A Typology of Mixed Methods Sampling Designs in Social Science Research. *The Qualitative Report* Volume 12 Number 2 June 2007 281-316.
- Pollock, V. and Sharp, J. (2012) Real Participation or the Tyranny of Participatory Practice? *Public Art and Community Involvement in the Regeneration of the Raploch, Scotland* *Urban Studies*. 49(14) 3063–3079, November 2012.
- Ray, I. (2007). Women, water and development. *Annual Review of Environment and Resources*, 32, 421–449.
- Schatzman, L., & Strauss, A. *Field research: Strategies for a natural sociology*. Englewood Cliffs,

N.J.: Prentice-Hau, 1973.

Teddle & Tashakkori (2009) *Foundations of Mixed Methods Research: Integrating Quantitative and Qualitative Approaches in the Social and Behavioral Sciences*. Los Angeles: Sage Publications, Inc.

Thomas, Olukayode (2011). "NDDC: controversy incorporated: *the Nation*, September 19, pp.2.

Uyigue E. & Agho M. (2007) *Coping with climate change and environmental degradation in the Niger Delta of Southern Nigeria*. CREDC, Benin City.

Vanguard Newspapers 05, March, 2013. Page 1. Vanguard Media Limited, Nigeria.

<http://www.vanguardngr.com>

Vanhoucke Mario (2012). Measuring the efficiency of project control using fictitious and empirical project data. *International Journal of Project Management* 30 (2012) 252–263.

World Bank. *Designing project monitoring and evaluation. Lessons and practices*, vol. 8. Operations Evaluation Department; 1996; <http://www.adpc.net/pdr-sea/eval/file39.htm>

(Assessed on line on 1/08/2014).

Yin, R.K., (1984) *Case Study Research: Design and Methods*, Applied Social Research Series, Vol. 5, Sage, Beverley Hills, California.

Yu, J., and Cooper, H., (1983), "A quantitative review of research design effects on response rates to questionnaires", *Journal of Marketing Research*, 20.