ASSESSMENT OF VARIATION IN OIL SPILL COMPENSATION VALUATIONS IN RIVERS STATE, NIGERIA

3 authors:

Chinedu Yhanata Okolo
Federal University of Technology Minna
1 PUBLICATION **0** CITATIONS

SEE PROFILE

Namnso Udoekanem
Federal University of Technology Minna
28 PUBLICATIONS **71** CITATIONS

SEE PROFILE

Muhammad Bashar Nuhu
Federal University of Technology Minna
29 PUBLICATIONS **71** CITATIONS

SEE PROFILE

Some of the authors of this publication are also working on these related projects:

CONSTRUCTION MANAGEMENT View project

Office Rental Dynamics in Minna, Nigeria View project

ASSESSMENT OF VARIATION IN OIL SPILL COMPENSATION VALUATIONS IN RIVERS STATE, NIGERIA

C. Y. OKOLO[1], N. B. UDOEKANEM[2] AND M. B. NUHU[3]

[1,3]Department of Estate Management and Valuation, School of Environmental Technology, Federal University of Technology, Minna, Nigeria
[2]Department of Estate Management and Valuation, School of Architecture and the Built Environment, University of Rwanda, Kigali, Republic of Rwanda
email: yhanatao@gmail.com

Abstract
Valuation is the basis upon which compensation for damage caused by oil spill should be determined. When huge variation occurs in such valuations, a lot of questions arise as to whether these valuations can serve as proxy for compensation claims of those affected by oil spill. This study examined the extent of variation in oil spill compensation valuations in Rivers State of Nigeria. Data for the study were collected from estate surveying and valuation firms in the study area through a structured questionnaire and interview, using purposive sampling technique. Data used for the surrogate valuations were obtained from the interview of farmers and fishermen. Median Absolute Percentage Difference (MAPD) was adopted in determining the extent of variation amongst the valuers' opinion of values. Relative Importance Index (RII) was used to rank the factors that cause valuation variance in oil spill compensation valuations in the study area. Findings indicate a variation of 22.36% and 37.49% in the valuations of fishing rights and economic trees respectively. Lack of databank, lack of uniform compensation rates and clients' influence on reported values were the most predominant causes of variation in oil spill compensation valuations.

Keywords: Compensation, Economic Trees, Fishing Rights, Oil Spill, Valuation Variation.

Introduction

Oil spillage has become a reoccurring phenomenon in the entire Niger Delta region of Nigeria and Rivers State in particular, considering that the state accounts for the highest level of oil exploration in the region and generates about sixty percent (60%) of the total revenue from oil in the country (Kuye, 2009). Valuation variation is the inability of two or more valuers to arrive at a similar estimate of value or a value within an acceptable margin of error. Valuation is a very important tool required by property investors to determine the worth of their property for different purposes. Such investors usually require valuations to enable them reach informed decisions on their property investments. In the case of compensation for damage caused by oil spill, valuation is required by the claimants to know the amount of compensation due to

them and also by oil companies, to ascertain the amount of compensation payable to the claimants.

Regrettably, valuers in Nigeria are still found wanting in this crucial role of estimating value for damages 3caused by oil spills. Issues of valuation inaccuracy, variation, uncertainty and clients' influence still affect the valuation profession. This has affected public confidence in the profession. Several researchers in the last two decades or so have investigated these subject matters. These studies include Parker (1998), Boyd and Irons (2002), Smith (2003) and Udoekanem (2012), among others.

Valuation is a science and an art, which implies that it follows a procedure and considers a lot of features which could be abstract in order to arrive at the opinion of

value. Quantification of some of these abstract features in valuation can result in differences in value by two or more valuers. Likewise, there could be higher level of variation in oil spill compensation assessment considering the fact that it includes assessment of compensation for disturbance, loss of use and injurious affections (Ajibola, 2013). Oil spill compensation assessment in Rivers state has been treated as compensation assessment for compulsory acquisition. These mix-ups could be traced to the legislative document that supports these valuations (Kakulu, 2008; Akujuru, 2014). Also, discrepancies are likely to occur in oil spill compensation valuation considering that there is dearth of information concerning assessment for some claims as they cannot be assessed based on market evidence. Valuation as a science and an art is not precise as individual valuer's subjective inputs can create some level of differences in the opinion of value (Ajibola, 2010).

The essence of the payment of compensation is to restore the affected individual to a state where he or she is neither better off nor worse off (Ajibola, 2013). A uniform and accurate oil spill compensation valuation is essential because it ensures that the oil companies are not exploited by the over payment of compensation. It also ensures that claimants on the other hand are not undercompensated. Therefore, an acceptable level of variation in oil spill compensation valuation is essential to both parties. It will also restore clients' confidence in the valuation process. High-quality valuations with minimal variations are required to maintain public trust in the valuation profession (Ayuthaya & Swierczek, 2014; Udoekanem, 2012). Agitation or confrontation by persons or groups affected by oil spillage always occur or ensued because compensation paid are often based on market goods only without consideration for environmental goods and services which are also affected (Nuhu, 2008). Furthermore, accuracy of oil spill compensation valuation

will ensure adequacy of compensation, which will in turn reduce agitation and confrontation by unsatisfied claimants.

Several studies have been carried out on valuation variance and accuracy in different countries including Nigeria (Parker, 1998; Boyd & Irons, 2002; Ogunba & Iroham, 2010). However, most of these researches did not look at valuation variance in oil spill compensation valuations. Thus, this study intends to fill this gap. However, the International Valuation Standard Council (IVSC, 2017) defined market value as:

> "*the estimated amount for which an asset should exchange on the date of valuation between a willing buyer and a willing seller in an arm's length transaction after proper marketing, wherein the parties had each acted knowledgeably, prudently and without compulsion".*

Valuers are concerned with the estimation of the market value of a property. Though in oil spill compensation valuation, the value sought might not necessarily meet the requirements mentioned in the definition of market value above, it should provide the minimum standard of measurement with which to assess compensation for damage resulting from oil spill. French and Gabrielli (2004) stated that a fundamental valuation model should reflect the role of property as an asset to the owner/business where market data is unavailable as is the case with most polluted environment such as environment polluted by oil spill. Akujuru (2014) went further to state that what is sought in valuation of polluted site is the quantification of compensation for damages suffered as a result of the spill and not compensation for loss. IVSC (2017) stated that value is market based and therefore all inputs must be developed from market data. It also asserted that aside hypothetical exchange price (market value), valuation may also use

measurement principles that consider alternative economic utility (other values) or value specified by statutes. It is clear that in oil spill compensation valuation, the value sought may not meet the definition of market value because in most cases, the damaged assets may not have comparable market values. The study ascertained if variation occurs in oil spill compensation valuations particularly in Rivers State, using empirical means and identified the likely causes of such variation, thus the need for the study.

Literature Review

Hager and Lord (1985) as cited in Effiong (2015) pioneered the research on valuation accuracy in the UK which sprang up subsequent researches by other authors in other areas such as valuation variation. Since then, several studies have been carried out on valuation accuracy and variance in the UK, US, Australia and other parts of the world (Parker, 1998; Baum *et al*, 2000; Boyd & Irons, 2002; Smith, 2003; French and Gabrielli, 2004; Lundstern and Gustafsson, 2006; Dunse *et al*, 2010, Nakamura, 2010; Beale, 2015).

Most of the studies on valuation variance and accuracy in Nigeria were conducted in Lagos (Ogunba, 2003; Ajibola, 2010; Babawale, 2012; Ayedum *et al*, 2011; Akinjere, Iroham & Oloke, 2013; Effiong, 2015). This can be attributed to the active nature of its property market when compared to other markets in the country. Paucity of market data, valuation approach, insufficient academic training, inexperience and client's influence were identified as the causes of valuation inaccuracy and variance (Ogunba, 2003, Ajibola, 2010; Ayedum *et al* 2012).

Ayedum *et al* (2011) argued that lack of standards contributed to inaccuracy in valuation. They sampled 45 valuation firms in Lagos and compared simulated valuation of 12 properties conducted by the sampled valuers with their sale prices and indicated

that inaccuracy in valuation was very high when compared with that of UK.

Ayedum *et al* (2012) further conducted a research to identify the causes of inaccuracy and variation in valuation. They used survey method and carried out personal interview of valuers in practice and academics in Lagos. They adopted simple statistical techniques in data analysis and found that valuation variation exits in the property market in the city. Similarly, Akinjare *et al* (2013) also examined valuation variance in Lagos and attributed it to the adoption of different yields and paucity of market data.

Effiong (2015) examined valuation variance in Calabar and Uyo. He collected data through questionnaire and adopted mean score, percentage and standard deviation in his analysis. The researcher identified wrong cost per square metre assumption and failure to discipline valuers on negligence cases as the reasons for valuation variance and inaccuracy. Also, Ayittey et al (2006), confirmed the existence of valuation inaccuracy and variance in Ghana. The causes of inaccuracy and variation identified by them corresponds with that of Nigerian researchers (Ogunba, 2003; Ajibola, 2010; Effiong, 2015). In Kenya, Kumuti (1995) conducted a study on variation in land compensation valuation and identified differences in the date of assessment, incidental cost added by private valuers, varying views on subdivision as a viable project, different land measurements, use of different comparables as some of the causes of variation in compensation forcompulsory land acquisition.

However, Akujuru (2014) maintained that valuation of marketable properties is common and poses not as much challenge as valuation for contaminated land. The researcher identified lack of valuation framework as the major challenge faced by valuers in the assessment of compensation for damages

caused by oil spills in the wetlands. In the study, it was discovered that most valuers adopt the common compensation methods meant for compulsory land acquisition to assess the value of contaminated wetlands and attributed this error to inadequate valuation curricular, vague compensation statutes and absence of standard of practice. The study went further to propose a framework that could help valuers in assessing compensation payable due to damages as a result of oil spill.

While Kakulu (2008) identified multiple standards, procedures and methods of valuation as some of the causes of wide discrepancies and inadequacy in compensation values. The researcher also identified out-dated compensation statutes as one of the causes of inadequate compensation. The study did purposive sampling of oil and gas compensation stakeholders such as landowners, valuers, land surveyors, lawyers, government and oil and gas companies. Methods suitable for philosophical, theoretical and methodological assumptions were used for the data collection. Analysis was done using the amalgam of principles of computer-assisted qualitative data analysis software (CAQDAS); focus group analysis, context anaysis, qualitative data analysis and phenomenological analysis. She suggested the introduction of a compensation code in Nigeria and the code should be based on the international standard of valuation for compensation.

Similarly, National Oil Spill Detection and Response Agency; NOSDRA (2014a) in its research identified that often a significantly wide difference in value of compensation claims for contaminated land occurred from one plot to another in similar locations. It attributed this to lack of standardisation and conflicting statutes.
A review of existing laws and regulations on assessment for compensation for damages in the oil and gas industry was carried out.

Comparative analysis of these laws was done against those of developed countries such as the United Kingdom and the findings supported the position of Kakulu (2008); that lack of standard statutes resulted in variation in valuation for compensation for damages caused by oil spill.

Based on existing literature on the subject, most of the studies on valuation variation in Nigeria focused on non-statutory (market) valuations and not statutory (non-market) valuations such as oil spill compensation valuation. However, Oladopo and Ige (2014) and Kumuti (1995) carried out their research on variation in valuation for compulsory acquisition of land. Regrettably, little or no research has been conducted on valuation variance in Rivers State when compared with Lagos, but most related researches in Rivers State and Niger Delta in general are more concerned with the adequacy and problems of oil spill compensation valuation. However, NOSDRA (2014b) carried out a study on oil spill compensation practice in Nigeria and identified the valuation process under the Land Use Act (LUA), the variations in compensation rates which are based on historical values, non-adjustment of rates for inflation, the non-recognisance of farmer's labour input by the rates, non-recognisance of future incomes from trees, the inadequacy of laws relating to oil spill compensation valuation as some of the causes of variations in oil spill compensation valuation.

Methodology
Descriptive research design was adopted for this study. A structured questionnaire and interviews were used to obtain primary data. A 4-point Likert scale was used to rank the responses of the respondents. Though there are 73 estate surveying and valuation firms in Rivers State as captured by the Nigerian Institution of Estate Surveyors and Valuers (NIESV) directory, a total of 80 structured questionnaires were administered to estate surveying and valuation firms in the State

including branches of firms captured in the NIESV directory of other States. This was done using the purposive sample technique and only 61 questionnaires were retrieved. Out of the 61 respondents, only 17 attempted the surrogate valuation. Responses from fishermen and farmers in the rural community affected by oil spills in the study area were obtained through interviews. Five fishermen and eight farmers were interviewed. Five estate surveyors and valuers were also interviewed together with a staff of National Oil Spill Detection and Response Agency (NOSDRA). Secondary data were gotten from text books, online and hardcopy journals, conference papers and other second-hand information sources that deal with valuation variance within and outside Nigeria.

Data collected were analysed using descriptive statistics such as Median Absolute Percentage Difference (MAPD), Relative Importance Index (RII), frequencies and percentages. Two surrogate valuations on oil palm as an economic tree affected by oil spill and loss of fishing right were used in obtaining valuers' opinion of value. The data used in preparing the surrogate valuations were data obtained from valuation problems in the field. Details of the valuation problems are as follows:

1. A 45-year-old fisherman in Bodo community in Gokana LGA of Rivers State was making an average catch of 4 local nets of fresh water fishes per week but currently as a result of oil spill he only makes about one local net catch of fresh fishes per week. He spends about ₦3000per week on running cost and maintenance. The current market price of the fishes is about ₦12, 500 per net catch depending on the maturity of the catch. The lifespan of the fisherman is estimated at 60 years.

2. An oil palm plantation located in Bodo community, Gokana LGA of Rivers State was polluted as a result of oil spill from the facilities of one of the International Oil Company. The plantation has an area of about 5000m^2 which contains 105 stands of matured high yielding palm trees. Each tree produces about 20 bunch of oil palm fruit per annum and the trees are about 10 years old. After the spill the palm tree produces less than 10 bunches per tree per annum. A bunch currently sells at ₦500 in the local market. Total cost incurred in the business is about ₦13,000 per month. The estimated lifespan of oil palm tree is 50 years.

Results and Discussion

Valuers surveyed for the study provided their opinions of value for the surrogate valuation problems. In the case of valuation for compensation for loss of fishing right, their opinions are summarised in Table 1.

Table 1. Yield, Capital Values and Methods Adopted in the Valuation for Compensation for Loss of Fishing Right by the Valuers

Valuer	Yield	Capital Value	Method
1	5.5	27000000.00	Investment
2	__	30000000.00	Investment
3	6.00	12205000.00	Investment
4	10.50	14151780.00	Investment
5	12.50	10906000.00	Investment
6	9.00	14219054.00	Investment
7	10.00	18700000.00	Investment
8	8.00	13000000.00	Investment
9	15.00	11400000.00	Investment
10	8.00	13187134.80	Investment
11	12.00	7000000.00	Investment
12	8.00	16000000.00	Investment
13	9.00	15420000.00	Investment
14	6.67	13903520.00	Investment
15	13.00	12368993.00	Investment
16	__	13135000.00	DRC
17	8.00	16420300.00	Investment

Source: *Field Survey (2017)*

Majority of the valuers (94%) adopted the investment method in the valuation for

compensation for loss of fishing right. This implies that the valuers are fully aware of the income approach as the appropriate valuation technique for such valuation in the study area. "Valuer 2" did not provide the yield he adopted in his valuation.

With respect to valuation for compensation for damage to oil palm trees, the opinions of the valuers are summarised in Table 2.

Table 2. Yield, Capital Values and Methods Adopted by Valuers in the Valuation for Compensation for damage to Oil Palm Trees

Valuer	Yield	Capital Value	Method
1	5.50	6709090.00	Investment
2	5.00	8858919.84	Investment
3	7.00	4760000.00	Investment
4	10.50	3449519.00	Investment
5	12.50	2925000.00	Investment
6	8.00	4612500.00	Investment
7	10.00	3697000.00	Investment
8	6.00	6151230.00	Investment
9	15.00	2150000.00	Investment
10	6.00	6000000.00	Investment
11	12.00	3075000.00	Investment
12	8.00	4400000.00	Investment
13	10.00	3608000.00	Investment
14	7.00	3060741.00	Investment
15	13.00	2800000.00	Investment
16	5.50	6700000.00	Investment
17	6.00	6151230.00	Investment

Source: *Field Survey (2017)*

In the surrogate valuation of oil palm trees, all the valuers used the investment method. Again, this indicates that the valuers are fully aware of the income approach as the appropriate valuation technique for the compensation valuation of oil palm trees damaged by oil spill in the study area. The variation in these two valuations regarding the opinions of value of all the valuers surveyed was measured using the median absolute percentage difference (MAPD) model and the result is presented in Table 3. The model is:

$$MAPD = L + \left[\frac{\frac{N}{2} - fl}{fm}\right] C$$

Where MAPD
= Median Absolute Percentage Difference
  L
= Lower class boundary of the MAPD class
  N = Total number of valuations
  fl
= Sum of frequencies of all classes below the MAPD class
  fm = Frequency of the MAPD class
  C = Class Interval

Table 3. Summary of the Extent of Variation in the Valuations

Claims	Median Absolute Percentage Difference (%)	
	Yield	Capital Value
Oil Palm	34.85%	37.49%
Loss of Fishing Right	29.10%	22.36%

Source: *Computed from Tables 1 and 2 using MAPD Model*

As indicated in Table 3, there is a variation of 34.85% and 29.10% in the yield adopted by valuers for the valuation for compensation for damage to oil palm trees and loss of fishing right respectively. These differences in yield adopted by the valuers implies that the use of different valuation inputs could account for variation in oil spill compensation valuations due to the fact that they have differences in their valuation outputs.

The Table also shows a variation of 37.49% and 22.36% for the capital values of oil palm and loss of fishing right respectively. This indicates that there is wide variation in oil spill compensation valuations in Rivers State. In comparison with the acceptable margin of error in the United Kingdom which is $\pm10\%$ and that of Australia which is $\pm15\%$, the extent of variation in oil spill compensation valuation in Rivers State is unacceptable. Though Nigeria does not have an official benchmark for margin of error in valuations that of the United Kingdom can be adopted as

a yard stick considering the fact that Nigeria is a commonwealth nation. Responses of the valuers on the causes variation in oil spill compensation valuations in Rivers State were analysed based on a 4-point Likert scale. Relative importance index (RII) of each of the factors was also computed to ascertain the most significant factors suggested by the valuers. The result is presented in Table 4 where analysis indicates that lack of databank is the most significant cause of variation in

oil spill compensation valuations and was ranked 1st by the respondents with a RII of 0.83. This may be attributed to the inability of NIESV and other relevant professional bodies and agencies to develop a reliable databank for oil spill compensation valuations. Most information concerning property transactions and valuations are hoarded. Also, the nature and location of some claims might make obtaining information about such claims difficult.

Table 4: Causes of Variation in Oil Spill Compensation Valuations in Rivers State

S/N	Suggested causes of variation	Weighted opinion of respondents				Weighted sum	Mean Score	R.I.I	Rank	Interpretation
		SA 4	A 3	D 2	SD 1					
1	Lack of databank	29 (116)	24 (72)	7 (14)	1 (1)	203	3.33	0.83	1st	Agree
2	Inactive market for assets affected by oil spill	15 (60)	19 (57)	20 (40)	7 (7)	164	2.69	0.67	6th	Agree
3	Non-adherence to applicable valuation standards	14 (56)	27 (81)	19 (38)	1 (1)	176	2.89	0.72	5th	Agree
4	Lack of punishment for non-adherence to standards	5 (20)	29 (87)	22 (44)	5 (5)	156	2.56	0.64	9th	Agree
5	Use of outdated valuation approach stipulated by law	20 (80)	23 (69)	9 (18)	9 (9)	176	2.66	0.66	7th	Agree
6	Insufficient technical knowledge	16 (64)	16 (48)	21 (42)	8 (8)	162	2.66	0.66	7th	Agree
7	Inexperienced valuers	4 (16)	22 (66)	25 (50)	10 (10)	142	2.33	0.58	10th	Disagree
8	Client's influence on reported values	29 (116)	13 (39)	16 (32)	3 (3)	190	3.11	0.78	3rd	Agree
9	Use of different valuation inputs	10 (40)	39 (117)	11 (22)	1 (1)	180	2.95	0.74	4th	Agree
10	Lack of uniform compensation rates for oil spill compensation valuations	20 (80)	31 (93)	9 (18)	1 (1)	192	3.15	0.79	2nd	Agree

Source: *Computed from Field Data (2017)*

Lack of uniform compensation with RII of 0.79 was ranked the second significant cause of variation in oil spill compensation valuations in the study area. This supports the position of NOSDRA (2014a) that the existence of several compensation rates such as the OPT rates, the South-South zonal rates and other rates causes variation in oil spill compensation valuations in the Niger Delta region of Nigeria.

Clients' influence on reported values with RII of 0.78 was ranked the third significant cause of variation in oil spill compensation valuations in the study area. This may be attributed to the fact that claimants clamour for outrageous compensation while the oil companies want to pay paltry compensation so they attempt to influence the valuer's opinion of value. This supports the findings of Udoekanem (2012) on the effect of client's pressure on valuations.

Conclusion
There exists a wide variation in oil spill compensation valuations in Rivers State. The MAPD of the valuers' opinion of values showed that a variation of 34.85% and 29.1% exist in the yield adopted by valuers for the valuation for compensation for damage to oil palm trees and loss of fishing right respectively. Likewise, a variation of 37.49% and 22.36% occurred in their opinions of value for both claims. The extent of variation exceeds the margin of acceptable error in the United Kingdom and Australia of $\pm 10\%$ and $\pm 15\%$ respectively. Lack of databank, lack of uniform compensation rates for oil spill compensation valuations and clients' influence on reported values were identified as the most predominant causes of variation in oil spill compensation valuations in the study area.

Recommendations
1. NIESV and other relevant bodies should develop a databank where valuers can easily retrieve information for execution of valuation jobs, as this will reduce the level of assumptions and inconsistencies.

2. Uniform compensation rates that reflect currents market realities should be established.

3. Valuers should adhere to the standards prescribed by NIESV and not allow themselves to be influenced by the whims and caprices of their clients.

4. There should be a synergy between valuers representing the oil companies and those representing the claimants in the execution of their valuation jobs.

5. There should be a clear standard covering oil spill compensation valuations and punitive measures adopted to curb non-adherence to standard.

6. Valuers should build their technical knowledgeable and experience by carrying out research on valuations and attending personal development programmes such as Mandatory Continuing Professional Development (MCPD) programmes where academicians could teach practicing valuers of recent research and findings concerning valuation.

References
Ajibola, M.O. (2013). Adequacy of legal provisions on valuation of wetlands for compensation in the Niger Delta. *Nigeria. Journal of International Review of Business and Social Science*, 2(3), 1-10.

Ajibola, M.O. (2010). Valuation Inaccuracy: An examination of causes in Lagos Metropolis. *Journal of Sustainable Development*, 3(4), 187-193.

Akinjere, O., Iroham, O., & Oloke, O. (2013). Valuation discrepancies in the value opinion of Professional Valuers' in Lagos. Nigeria *International Journal of Economy, Management and Social Sciences*, 2(6), 272-276.

Akujuru, V.A. (2014). *A framework for determining the compensable value of damages due to Contamination to wetlands in the Niger Delta of Nigeria* Unpublished PhD Thesis, University of Salford, Salford, England.

Ayedum, C., Ogunba, O., & Oleyede, S. (2011). Empirical verification of accuracy of valuation estimates emanating from Nigerian Valuers: A case study of Lagos Metropolis. *International Journal of Marketing Studies*, 3(4), 117-129.

Ayedum, C., Oloyede, S., & Durodola, O. (2012). Empirical studies of the causes of valuation variance and inaccuracy in Nigeria. *Journal of International Business Research*, 5(3), 71-80.

Ayittey, J., Gyamfi-Yeboach, F., & Gambrach, A. (2006). *Valuers: Value investors or assessors.* Paper presentation at the 5[th]International Federation of Surveyors Regional Conference, Accra, Ghana: International Federation of Surveyors.

Ayuthaya, N. & Swierczek, F. (2014). Factors influencing variation in value and investors' confidence. *IOSR Journal of Business and Management*, 16(5), 41-51.

Babawale, G.K. (2012). An assessment of the current standard of real estate valuation practice in Nigeria. *Elixir International Journal*, 47 (3), 9094-9102.

Baum, A., Crosby, N., Gallimore, P., & Gray, A. (2000). *The influence of valuers and valuations on the workings of the commercial property investment market*. Department of Land Management, University of Reading.

Beale, T. (2015). Real estate theory versus practices: A case study of valuation practices of Jamaican valuers. *The Appraisal Journal*, Spring, 1(1), 113-125.

Boyd, T. & Irons, J. (2002). Valuation variance and negligence: The importance of reasonable care. *Pacific Rim Property Research Journal*, 8(2), 107-126.

Dunse, N., Jones, C. & White, M. (2010). Valuation accuracy and spatial variations in the efficiency of the property market. *Journal of European Real Estate Research*, 3(1), 24-45.

Effiong, J.B. (2015). A comparative study of valuation variance and accuracy between Nigeria and UK . *International Letters of Social and Humanistic Sciences*, 57(1), 94-105.

French, N. & Gabrielli, L. (2004). The uncertainty of valuation. *Journal of Property Investment and Finance*, 22(6), 484-500.

IVSC (2017). *International Valuation Standards*. London: International Valuation Standard Council. London.

Kakulu, I.I. (2008). *The assessment of compensation in compulsory acquisition of oil and gas bearing lands: The Niger Delta Experience*. Paper presented at the joint seminar on compensation for compulsory land acquisition and takings. Helsinki, Finland: International Federation of Surveyors.

Kumuti, B.J. (1995). *An analysis of the causes of variations in valuation for land compensation.* Unpublished

Master's Dissertation, University of Nairobi, Nairobi, Kenya.

Kuye, O. (2009). *Property valuation techniques: A practical approach*. Lagos, Nigeria: Climax Communication Limited.

Lundstorm, S. & Gustafsson, C. (2006). *Valuation variation- Result from a repeated experiment.* Paper presented at Pacific Rim Real Estate Society Conference. Auckland, New Zealand. Pacific Rim Real Estate Society.

Nakamura, L. (2010). How much is that home really worth? Appraisal bias and house-price uncertainty. *Business Review*. Retrieved from http://www.philadelphiafed.org on 25th of February, 2017.

NOSDRA (2014a). *New Compensation Systems and Mechanisms in the Oil and Gas Industry in Nigeria*. Abuja: National Oil Spill Detection and Response Agency, Nigeria.

NOSDRA (2014b). *Towards a New Oil Spill System in Nigeria*. Abuja: National Oil Spill Detection and Response Agency, Nigeria.

Nuhu, M.B. (2008). Compulsory purchase and payment of compensation in Nigeria: A case study of Federal Capital Territory, Abuja. *Nordic Journal of Surveying and Real Estate Research*, 3, 102-126.

Ogunba, O.A. (2003). *The demand for accuracy in valuations: The case of Nigeria*. Proceedings of the International Symposium on Globalization and Construction, Thailand, 679-688

Ogunba, O.A. &Iroham, C.O. (2010). A search for an acceptable margin of valuation error: A Case study of valuers and their clients in Nigeria. *Sri Lankan Journal of Real Estate*, 54-73.

Oladapo, R.A. & Ige, V. (2014). *Assessment of claimants' satisfaction with variations in Compensation paid for compulsory land acquisition in Ondo state, Nigeria*. Paper Presented at FIG congress, Kualar Lumpur, Malaysia.

Parker, D.R. (1998). *Valuation accuracy: An Australian perspective.* Paper presentation on 4th Pacific Rim Estate Society Conference, Perth, Australia. Smith, W. (2003). *Variations in Valuations: Will identical data input lead to identical output of valuation results?* Paper presentation on 10th European Real Estate Society Conference.Helsinki, Finland. European Real Estate Society.

Udoekanem, N. B. (2012). *Effect of client pressure on market valuation of residential properties in Minna, Nigeria*. In Laryea, S., Agyepong, S. A., Leiringer, R. and Hughes, W. (Eds). Proceedings of the 4th West Africa Built Environment Research (WABER) Conference held at the National Merit Award House, Abuja, Nigeria on 24th – 26th, pp. 1367-1374.