The Influence of Contemporary Models on Valuation Practice in Nigeria

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SUMMARY

Property valuation as a discipline is fast becoming a global issue. In recent past, this discipline has attracted a lot of attention especially in the areas of accuracy, variance and the development of new techniques. The issue here is: how has the Nigerian practitioner responding to this global development? In this wise, this paper based on empirical studies involving 250 estate valuers working in both public (97) and private (153) establishments; examine the practitioner's awareness, understanding, usage and problems of using any of the contemporary methods.

The study, using hypothesis testing concerning proportion in a Bernoulli experiment, reveals that majority of the Nigerian practitioners are not aware of, do not understand, and had not been using any of the contemporary methods. The study recommends that adequate attention should be focused on resolving the myriads of institutional and economic problems inhibiting the evolution of adequate property market infrastructure and valuation practice by the Nigerian Institution Of Estate Surveyors And Valuers; and Estate Surveyors And Valuers Registration Board Of Nigeria.

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1. INTRODUCTION

The Nigeria Property Market and real estate valuation practice had evolved through various stages since independence as a response to the growth and development of the nation's economy.   Initially, the average Nigerian places a very high premium on the ownership of landed property as an indication of status symbol and prestige. Real estate was therefore, not until mid 70s considered as investment media with the possibility to generate adequate return. The result is few transactions in outright sales of property. In some places, it was considered a taboo to sell property.

With the advent of urbanisation, partly because of economic growth and state creation, coupled with the oil boom, there emerged an unprecedented demand for all categories of accommodation to meet the space requirements for the increasing spate of activities and population growth. The cumulative effect of these was the staggering rise in rents. According to Agbatekwe, (1988), "Real property was suddenly seen in a new light, no longer as simply something to leave for kids when you pass on, but as quick money – spinning venture". Under this situation, the Nigeria property market like the UK property market was characterized by long leases, single digit inflation rates, stabilized income etc. In this wise, it was not difficult for the first crop of real estate practitioners who were trained in the UK to fashion their practice after the manner stipulated by Royal Institution of Charter Surveyors (RICS). Real property investment was successful during this period only because of the emotional involvement and brighter economic climate. Consequently, Nigerian real estate practitioners had no problem in satisfying their clientele.

The economic recessions of the 80s together with the government structural adjustment programmes, led to the downward trend in the level of economic activities, with the property market having its fair share. High cost of building materials, long void period, low occupancy rates and high vacancy rates characterised the property market. Within this period, real estate valuation practitioners began to have problem with the use of prescribed methods of valuation "imported" from the UK; especially the investment method of valuation. "Valuation surveyors began to adopt the position that the economy was too volatile and unstable to support the investment method capital values". This position was hinged on the premises that the investment method invariably produced estimates lower than market prices (Ogunba,1997, Ogunba et al, 2005). In reaction to this, the Nigerian Institution of Estate Surveyors and Valuers commissioned a research on valuation methods with special reference to Years Purchase to be adopted in Nigeria property market (Igboko, 1992). This notwithstanding, the general response was a preference for cost method of valuation for investment property which has attracted a lot of criticism especially from the academia (Ogunba and Ajayi, 2000; Ogunba et al, 2005). According to Ogunba et al, (2005), the Nigerian valuers should revise the yields they employ in recession times downwards to

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compensate for investors expectations of income growth (the reverse yield gap issue) and such a revision of yields should more appropriately be done within the framework of Discounted Cash Flow Analysis.

Around the same period, the inadequacy of this method began to manifest in the UK. The UK property market collapse of 1973 coupled with the reports in early 80s that assets of privatized companies were sold at prices substantially in excess of the valuation placed on them heralded a searchlight beamed on the reliability of these methods. In this wise considerable research work was carried out in the light of UK real estate markets. These efforts were bi-focal in direction. The first were directed at the price predicting accuracy of investment method (Crosby et. al. (1993), Hager and Lord (1985), Brown (1985), IPD/Drivers Jones (1988) Cullen, (1994), and Matysiak and Wang, (1995)) and the second addressed the structural basis of the investment method in its conventional form (Sykes (1981), Bowcock (1983), Crosby (1983), Baum (1984). The consensus of opinion among these writers was that the conventional valuation methods were no longer able to achieve the expected results and there is the need to look for new methodology to cope with the realities of the moment. Consequently, a couple of methodologies variously described as contemporary models emerged. Presently, valuation methods employed in the UK and some European countries vary between DCF approaches (contemporary models) and the income capitalization (conventional) methods (Mokrain, 2002). In this wise, the objective of this paper is to consider how these contemporary models have filtered into the Nigeria real estate markets. The remainder of the paper is structured as follows: the next section (section 2) deals with the current position of the conventional methods of valuation in Nigeria. This is followed in section 3 by an exposition of the contemporary models in the global context. Section 4 provides the methodology adopted for the empirical studies. Data analysis and discussion of results are dealt with in section 5 while conclusion and policy implications are contained in section 6.

2. THE CONVENTIONAL VALUATION METHODS IN THE NIGERIAN REAL ESTATE PRACTICE

Valuation practice started in Nigeria by a handful of RICS general practice surveyors and valuers who were trained mainly in the UK in the late 1960s. By 29th August, 1975, Decree No 24 0f 1975 was promulgated to establish the Estate Surveyors and Valuers Registration Board of Nigeria as the official machinery for the regulation of the profession of estate surveying and valuation in the country. In addition, this decree gave official recognition to the Nigerian Institution of Estate Surveyors and Valuers as the national professional organization to cater for the interest of those in real estate practice. Valuation practice fashioned in line with the UK practice continued without occasion for complaint in the 1960s and 1970s. For example, the definition of open market value as given by the RICS and adopted by the Nigerian Institution of Estate Surveyors and Valuers in her Guidance Notes on Property Valuation (NIESV, 1985) is:
The best price which the sale of an interest in property might reasonably be expected to have been completed unconditionally for cash consideration on the date of valuation assuming:
  (a)   a willing seller,

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(b)   that prior to the date of valuation there had been a reasonable period (having regards to the nature of the property and the state of the market) for the proper marketing of interest, for the agreement of price and terms and for the completion of the sale.

(c)   that the state of the market value and other circumstances were on any earlier assumed date of exchange of contracts, the same as on the date of valuation; and

(d)   that no account is taken of any additional bid by a purchaser with a special interest.

The above market value definition which is still been used in the country obviously limit value to the estimation of the most likely selling price and does not include the investment worth. According to Ogunba (1997), investment worth is not usually what Nigerian valuers carry out when they use the investment method of valuation and the general impression amongst valuers is that Nigeria is not ripe for such valuation now.

Studies conducted by Ogunba (1997), Ogunba and Ajayi (2000) and Ogunba et al (2005) reveal that the Nigerian valuation practitioners believed that the investment method currently provides capital value estimates that are lower than market prices and in order to use this method now, adjustment of constituents variables would be required to produce accurate capital values; and that the depreciated replacement cost method of valuation produces estimates that are closer to market prices and is therefore a more realistic and appropriate method of valuing income producing property in the current economic circumstance.

Various criticisms have been adduced to conventional investment methods of valuation worldwide among which include errors of logic and arithmetic, and the implicit nature of yield used (Bowcock 1983, Crosby, 1991; Brown 1991 Baum and Macgregor 1992, Ajayi 1994). In Nigeria, moreover, the investment method of valuation has a peculiar problem. The imported valuation table widely used assumes annual rent paid in arrears whereas rent is usually paid in two or three years in advance. The issue was the inconsistency between valuation figure arrived at using theories derived from UK literature and the actual property values presented by local market evidence, consequently, valuers resulted into the manipulation of capitalization coefficient to adjust theoretically computed property value to match the actual market prices (Igboko, 1992). This is the cause of the disillusionment expressed by the Nigeria valuers over the inadequacy of property investment yields (Leramo, 1992). According to Idudu (1991), no surveyor with broad training in macro economics can apply rate as low as 3% and 5% to valuation of property (the relative advantage of property as an investment notwithstanding) when it is possible to obtain a yield of 15 % in fixed deposits. Ajayi (1997, 2006) and Ogunba et al (2005) argued that there was nothing wrong in property yields lower than the yield on fixed deposits, this they described as the emergence of reverse yield gap in the Nigeria property market.

Apart form the intrinsic flaws in All Yield Risk investment methods of valuation, their appropriateness and correct application to the interest created by the Land Use Act is questionable. As a result of Land Use Decree (now act) no 6 of 1978, it was no longer possible to own land allodially, land itself becomes incapable of ownership and what can be owned is the right of occupancy (Olawoye, 1981). Several writers agreed that the nature and

quantum of estate conferred by a Right of Occupancy is less than freehold (Olawoye, 1981, Umezuruike,1989 etc). It is an estate for term certain. However, the common practice is for the Estate Surveyors and Valuers to ignore the certainty nature of the term of the Right of Occupancy and treat this as an estate in fee simple in their valuation exercise. Also the practitioners are not incorporating the obligation to pay ground rent and premium (an obligation of a Right of Occupancy holder that further confirms it as an estate less than freehold) into their valuation inputs (Bello, 2001, 2006)

Akinyode (1987), in a survey of sixty seven valuation reports drawn from fifteen valuers revealed that the Depreciated Replacement Cost method was the most important basis of valuation used by valuers in Nigeria. Similarly, a survey on the contemporary methods of valuation in Nigeria, a decade after Akinyode's study, showed that the Nigerian Estate Surveyors and Valuers had not seen the need to discard the Depreciated Replacement Cost Method where it was necessary to do so (Ogunba, 1996).

Depreciated Replacement Cost as pointed out by Akinyode (1987) is of doubtful theoretical validity and will yield erroneous results when used as a method to find the open market value as distinct from a specialised purpose like insurance value. Values arrived at by Depreciated Replacement Cost method are often too high as a result of blind reliance on an over simple methodology (Ajayi,1997). Depreciated Replacement Cost produces a higher figure than conventional investment method when used by Nigerian valuers because physical depreciation is only provided for in their valuation, provision is not made for functional, technological and economic obsolescence where they exist (Otegbulu, 2001). Ogunba et al (2005) cautioned that pro-cost practitioners must be wary in adopting the calculated capital values determined by replacement cost analysis as selling prices as there is significant scope for over pricing.

Recent studies have espoused the need for change from an approach based on an intuitive adjustment of the yield to an approach based on an explicit analysis of the relevant variables (Ajayi, 1997, 2006). Consequently, a host of contemporary models have emerged. The next section will provide an overview of these models.

3. THE CONTEMPORARY MODELS

The contemporary models can be categorized as follows:
− Discounted Cash Flow models
− Statistical Approaches
− Neural Network and
− G I S. Approach.

The Discounted Cash Flow model is the most appealing to the practitioners. In studies carried out by Mokrain (2002), valuation methods employed in the UK, Netherlands, Germany, France and Sweden vary between DCF approaches and income capitalization approaches. D C F models are explicit and are formulated to address the conventional method of over valuation of the term and undervaluation of the reversion and can be grouped as follows:

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- Growth explicit models: Greaves 1972, Marshal's equated yield analysis (1976). Sykes Rational model (1981) is hybrid version of equated yield model.
- Real value approaches: wood (1973), real value/ equated yield approach: - a simplified and remodeled version of greave's real value approach (Crosby, 1982).

Other models variously proposed in the literature include Hierarchical and statistical approach, Analytical Hierarchical Process (AHP), Verbal, unbalanced scaling technique commonly used in attitudinal research, Neural network model , Time series, G I S and Hedonic analysis (Greaves, 1984; Yeosweeching, 1983; Ong and Chew, 1996; Adair, Berry and McGreal, 1996; Do and Grudnitski, 1992; Conellan and James, 1996; Wyatt 1996)

A lot has been written on the need and usefulness of each of these models, some of which are readily applicable to Nigeria real estate market while others are not. The purpose of this paper is not to replicate such views but to determine empirically the relevance of these models to Nigeria property market.

4. THE METHODOLOGY

Since the study aims at assessing the effect of the contemporary models to valuation practice, the first step in the empirical analysis therefore, is to determine the need for such models. In this wise, the analysis will be presented in two stages as follows:
- the extent of valuation accuracy and variance within the conventional valuation practice and
- the influence of the contemporary models.

For the study involving valuation accuracy and variance, fifteen (15) estate firms were engaged to value three recently purchased properties (A, B C D E and F) for sales and mortgages. Property A and D were to be valued for sales, C and F for mortgage with the required loan amount revealed to the valuers, and B and E to be valued for mortgage, but the loan amount was not disclosed to the valuers. Their valuations were compared with the actual purchase price. The dispersion between these valuations and the purchase price were analyzed and tested using t-statistic
Table 2 shows the description of each of the properties.

Table 2: description of the properties

PROPERTY TYPE	DESCRIPTION	LOCATION	RENTAL VALUE (₦)	AMOUNT OF LOAN SOUGHT(₦)	SALES PRICE (₦)	YIELD (%)
A	3 Bedroom detached bungalow	Owo avenue Ijapo estate	200,000.00	-	6,000,000.00	3.33
B	3 Bedroom detached bungalow	Eyemote street, Ijapo estate	180,000.00	Not Disclosed	6,400,000	2.8
C	3 Bedroom detached bungalow	Ikale street	150,000.00	5,800,000	5,000,000.00	3.0
D	Shopping mall	Oyemekun Road	1,080,000.00	-	25,000,000.00	4.32
E	Shopping mall	Oba Adesida road	1,620,000	Not Disclosed	40, 000,000	4.05
F	Shopping mall	Oyemekun Road	1,350,000	40,000,000	28,000,000	4.82

For the study involving the contemporary models, data were obtained from the questionnaire distributed to Estate Surveyors and Valuers practicing within the Lagos Metropolis and Akure, the Ondo state capital. Using the methodology of Finlay and Tyler (1991) and Bello, (2003), the respondents provided the primary data in respect of the following issues.

− Awareness of the model: This deals with the extent to which the Estate Surveyors and Valuers have heard about each of the models.
− Understanding of the model: This describes the extent to which the Estate Surveyors and Valuers understand each of the models.
− Usage of the Model: This determines to what extent, the Estate Surveyors and Valuers have recently used each of the models.

In all, 350 questionnaires were administered to estate valuers working in both public (150) and private (200) establishments. Of these, 250 (public (97) and private (153) completed questionnaires were returned and analyzed, representing a 71.43 % response rate. The null hypotheses to be tested include:

− The majority (at least 51%) of the Estate Surveyors and Valuers are not aware of the various models that have been developed.
− The majority (at least 51%) of the Estate Surveyors and Valuers do not understand the theoretical basis for the models that have been developed.
− The majority (at least 51%) of the Estate Surveyors and Valuers have not been using at least one of the models that have been developed.

The above deals with the tests of hypotheses concerning proportion in a <u>Bernoulli</u> experiment. The appropriate statistics on which to base the decision criterion is the binomial

random variable X, when values of X are far from the mean μ = npq, we reject the null hypothesis

Where n=no of observations.

p=probability of success

q=probability of failure.

. To test the null hypothesis therefore,

H_o: p = 51

H_1: p < 51

The critical region of size α is given by

$x \leq K_\alpha{}^1$

Where $K_\alpha{}^1$ is largest integer for which

$P(x \leq K_\alpha{}^1$ when $P = P_o)$

$= {}^{K\alpha}\sum b(x; n; P_o) \leq x.$
  x=0

   Using the normal approximation, the Z value for testing $P = P_o$ is given by

$$Z = \frac{x - n\ po}{\sqrt{np_0 q_o}}$$ …………………………..(i)

Therefore,

When H_o: P = 0.51

        H_1: P < 0.51

α   = 0.05, Critical region Z < -1.645.

5. DATA ANALYSIS AND DISCUSSION OF RESULTS

5.1 Valuation Variance

Given the same set of information, the valuation figures of the 15 firms are expected to fall within a reasonable range. Conventionally, this has been taken as 5%, if not, valuation variance is said to exist. Table 3 shows the descriptive statistics describing the extent of variation between the valuations of the firms (i.e. valuation variance).

Table 3: measures of variation between the valuations of the firms

PROPERTY	RANGE	STANDARD DEVIATION	KURTOSIS	COEFFICIENT OF VARIATION
PROPERTY A	915000.00	215623.68012	7.403	3.58
PROPERTY B	600000.00	146639.33728	1.155	2.27
PROPERTY C	1100000.00	286680.50908	0.028	4.71
PROPERTY D	36000000.00	10639884.53213	-0.693	29.31
PROPERTY E	4708000.00	1269735.10548	0.152	2.90
PROPERTY F	10000000.00	3163116.97238	-0.795	2.36

Source: Analysis of surveyed data, 2006

The range indicates a variation between ₦600, 000 for property B to ₦36, 000,000 for property D. similarly the SD varies from ₦ 146639.33728(Property B) to ₦10639884.53213 (Property D). The relative dispersion (as indicated by the coefficient of variation) shows the lowest figure of 2.27% for property B and the highest figure of 29.31% for property D. Generally, with the exception of property D, these variations fall within the "acceptable range". This is expected, especially for property A, B and C. which are residential properties, common, with evidence of transaction readily available. This is epitomized by the fact that more than 80% of the firm used evidence of recent sales in their analysis. For property D, E and F, (shopping malls), which are not easily available for sale in the open market hence no firms used evidence of recent sales. With the exception of property D (valuation for sale), a greater proportion of firms (87%) used contactor method of valuation which probably accounted for the lower variation. The sample distribution shows a greater clustering among the residential properties (kurtosis of 7.403, 1.155 and 0.028 for A, B and C respectively) than the shopping mall (kurtosis for D=-0.693, E=0.152 and F-0.795)

5.2 Valuation Accuracy

In Nigeria, valuation is carried out to estimate the probable market price, where the valuation is at great variance with the market price, the valuation is said to be inaccurate. Table 4 shows one sample t-test for the valuation of the fifteen firms together with their sales prices. This procedure tests whether the mean of the valuation figures estimated by the firms for each of the property differs from the sales price of that property.

Table 4: one sample t- test

	Test Value (Sales Price)	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
						Lower	*Upper*
Property A	6000000	.377	14	.712	21000.00000	-98408.4140	140408.4140
Property B	6400000	1.382	14	.189	52333.33333	-28872.8249	133539.4916
Property C	5000000	14.726	14	.000	1090000.00000	931241.6257	1248758.3743
Property D	25000000	4.113	14	.001	11300000.00000	5407828.3417	17192171.6583
Property E	40000000	11.681	14	.000	3829666.66667	3126510.8026	4532822.5308
Property F	28000000	8.029	14	.000	6557466.66667	4805790.8736	8309142.4598

Source: Analysis of surveyed data, 2006

For properties C, D, E and F; which have confidence intervals entirely above 0.00, we can safely say that the firms produce valuation figures that are significantly higher than the sales price. This is inconformity with the previous studies. Various reasons have been adduced to this, which ranges from inadequacy in using contractor method for valuing investment property as well as clients influence. For property D, E and F, this can be attributed to the fact

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that evidence of sales are not available, and contactor methods were mainly used, while property C showed evidence of influence by the loan amount disclosed, in this case, all the valuation figures estimated were far above the revealed amount of loan sought by the client.

This section has confirmed the need for Nigeria valuers to employ technique(s) that will enhance the quality of valuation services rendered to their clients. In this wise, to which extent have they been using the contemporary techniques. The next section will answer this question.

5.3 The Influence of the Contemporary Models

Table 5 shows the results of the test of the hypotheses involving the percentage of the practitioners that are not aware, understand or used the contemporary models, at $\alpha = 0.05$ Level of Significance, the critical region falls within $Z < -1.645$.

Table 5: Test of Hypotheses: Summary of Findings (Z – Values).

	HYPOTHESIS 1 At Least 51% Are Not Aware X* (Z)**	HYPOTHESIS II At Least 51% Have Not Used This Measure X (Z)	HYPOTHESIS III At Least 51% Do Not Understand This Measure X (Z)	DECISION
DISCOUNTED CASH FLOWS	220 (11.702)	248 (15.25)	64 (-8.03)	Accept I, II & Reject III
NEURAL NETWORKS	250 (17.28)	250 (17.28)	250 (17.28)	Accept I, II& III
TIMES SERIES	250(17.28)	250 (17.28)	230 (12.97)	Accept I, II& III
HEDONIC/REGRESSION MODEL	250(17.28)	250(17.28)	237 (13.85)	Accept I, II& III
G I S	250(17.28)	250 (17.28)	250 (17.28)	Accept I, II & III

X =Actual number that are not aware, used or understand the model*
*Z** =Test statistic (z -values)*
Source: Analysis of surveyed data, 2006

Table 5 revealed that the majority of the Estate Surveyors and Valuers are not aware of many of the contemporary valuation models that have been developed. The only one the practitioners are familiar with is the DCF. This is probably because this is commonly used in other area of practice such as feasibility appraisal. Consequently, most of the techniques are not understood by the majority of the practitioners and hence are not used in practice.

6. CONCLUSION AND POLICY IMPLICATION

This study has revealed the inadequacy of the conventional valuation methods being used by the Nigerian real estate practitioners and hence confirmed the need for Nigeria valuers to employ technique(s) that will enhance the quality of valuation services rendered to their clients. The study further revealed that, in spite of the obvious need for the contemporary valuation models, there is a low level of awareness, understanding and usage of these models by the Nigerian real estate practitioners. The inability of the majority of these practitioners to understand the theoretical basis underlying these valuation techniques could be linked to the nature and content of their undergraduate curricula. Presently, except at graduate levels, most of the higher institutions offering courses in estate management in Nigeria have not incorporated the teaching of these models into the curricula and academic programme.

This need for Estate Surveyors and Valuers to provide qualitative service to their clients calls for changes in the curriculum and academic programme of the polytechnics, colleges of technology, and universities offering courses in estate management as well as the post qualification professional training provided by the Nigerian Institution of Estate Surveyors and Valuers. In this regard, the Nigerian Institution of Estate Surveyors and Valuers is urged to formulate policy that will promote the promulgation and discussion of ideas, opinions and issues related to these areas. The Continuous Professional Development (CPD) Programme of the institution should be refocused to address this area of deficiency.

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