EMPIRICAL ASSESSMENT OF STUDENT'S PERCEPTION OF THE TEACHING AND LEARNING OF FUNDAMENTALS OF PROPERTY VALUATION IN NIGERIA'S TERTIARY INSTITUTIONS

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Abstract

Property valuation is a core competence of estate management profession, the teaching of which commences in second session in the most Nigeria's tertiary institutions and run through the remaining sessions of the programme duration. This study delves into student's perception of the teaching and learning of fundamentals of property valuation which is vital to undertaking diverse valuation exercise. Data for the study was derived from both primary and secondary sources. Questionnaires were administered to final year students of Estate Management in three different universities in the Southwest Nigeria, while secondary information was derived from journals, valuation textbooks and reports. Basic statistical tools such 5-Point Likert scale, mean score analysis and relative importance index analysis were engaged in the analysis. Results were presented in tables and then discussed. The study showed amongst others that some aspects of the fundamentals of property valuation are not satisfactorily taught and students still find it difficult to comprehend valuation tables and to know when to apply some of the tables. The study concludes by recommending student's centered active learning approach in a bid to improve on teaching. The study further recommends combination of teaching practices such as teaching discourse, visual representations and a variety of social interaction. Effective teaching monitoring and feedback mechanism would also go a long way to improve the situation.

Keywords: Student, Perception, Property, Fundamentals, Valuation, Learning.

1   INTRODUCTION

Property valuations according to [1] are important aspect of modern economy as they support the banking system and set the benchmarks for collateral values. The author further noted that property valuations are important inputs in balance sheets and are sought for business loans in the corporate sector. Property valuations are also important for the ordinary man when they buy, sell or rent houses and other types of properties and therefore needed to be carried out with a high level of integrity and professional competence [1]. Real estate valuation according to [2] is rooted in the concept and categorization of value and the principle of measurements. The authors further opined that historically formed appraisal methodologies have continued to evolve over time to reflect the trends of changes of both exogenous and endogenous character of properties as well as property market.

Thus crucial to the determination process of a property's worth is the understanding and selection of appropriate basis and method for required purpose. The three primary approaches to valuation are the cost approaches, income approach and the market or direct comparison approach with cost and market approaches somehow connected to the income approach. This is because the eventual cost of construction or comparable rent has to be capitalized or discounted as may be required. Income approach to valuation determines the future benefits accruable to ownership of property whether freehold or leasehold and express the future benefits in terms of present value [3]; [4]. The income approach to investment valuation works in two ways; the income capitalization method and the discounted cashflow method. The two ways reflect the twin concepts of compounding and discounting both of which are alternate ways of taking into consideration the time value of money [4]. The income capitalization method uses more of compounding which involves converting income, especially initial income to value by means of compound interest based multipliers while the discounted cashflow method uses more of discounting of streams of future income. The future benefits expressed in money terms as income vary in duration, quality and durability, so does the investment return expected.

These complex relationships among the valuation variables using income method are expressed in mathematical models and formulae used in investment, finance and accounting. The capitalization of income involves the use of these mathematical models and formulae. Thus the knowledge of the

mathematics of finance and theories of compounding and discounting constitutes a basics requirement of every professional valuer as they form part of the foundation of valuation theory. The different mathematical formulae required in appraisal have been put together in the form of valuation tables. [3] aptly summarized that proficiency in the use of valuation tables can never be a substitute for theories for proper knowledge of the property market and appreciation of the factors that influence value. In using investment valuation method, the seven tables that are commonly used and are examined in this paper are

- The amount of N1
- The amount of N1 per annum
- Annual Sinking fund to produce N1
- The present value of N1
- The present value of N1 per annum
- Annuity which N1 will purchase or simply, Annuity of N1

2   PURPOSES AND BASIS OF VALUATION

Valuation is the process of estimating the value of a property based on all the relevant facts known to the valuer and these facts may vary according to the prevailing circumstances. Royal Institute of Chartered Surveyor define valuation as the estimated amount for which an asset should exchange on the date of valuation between a willing seller and buyer in an arms-length transaction, after proper marketing, wherein the party had each acted knowledgeably, prudently and without compulsion. The [11] also defined it as the estimated amount for which a property should exchange on the date of valuation between a willing buyer and a willing seller in an arms-length transaction after proper marketing wherein the parties had each acted knowledgeably, prudently and without compulsion. Valuation is normally undertaken for different purposes and such purposes include sale, purchase, mortgage, rating and taxation, compensation, compulsory acquisition, company account, investment, insurance, rental, going concern, redevelopment, probate, balance sheet ([5], [3], [4]. The basis of valuation on the other hand defines the fundamental principle behind involved in the valuation and this may vary and depend on the purpose of undertaking the valuation exercise. These fundamental principles or basis include "Open market value," "Fair market value," "Depreciated replacement cost," "Net annual value," and "Cost of construction anew" which could be Reinstatement/Indemnity" [6]. while purpose defines the use to which the valuation is to be put or the problem it is to solve, basis defines the value concept which satisfies the purpose and solves the problem posed. In a valuation, the client determines the specific purpose of the exercise while the valuer determines the appropriate basis for the purpose. After establishing the basis, the suitable method is selected by the valuer.

3   INVESTMENT VALUATION METHOD

The investment valuation method also known as income capitalization is a method of determining the present worth of the rights to future benefits to be derived from the ownership of a specific interest in a property under given market conditions [3]. The future rights is usually expressed as future income (rent) or future reversionary capital value which in itself is an expression of the resale rights to future benefits. Capitalization is the process of converting future income flows to present value capital sum and this represents the summation of the future benefits, each discounted to the present at an appropriate market-driven discount rate or rate of interest. The application of investment valuation method is largely reliant on basic valuation tables. Thus understanding of these tables is crucial to making an informed and reliable opinion of value concerning the subject property. [7] averred that financial models based on market simulation are relevant where a property is leased or capable of being leased and there is an absence of sales transactions from which to draw an inference of price. The author further pointed out that the calculations and formulas used in these models will include yields and discount rates but also will reveal rental rates, operating costs, vacancy levels etc, from which a comparison can also be made as well as providing a prediction of price. The basis of the method according to [8] is

- For freeholds: Net income × Years purchase single rate = Capital value
- For leaseholds: Net profit rent × Years purchase dual rate tax adjusted = Capital value

3.1 The valuation tables

[4] carefully analysed and presented the models of calculating valuation tables for income in advance and in arrears. These are subsequently presented in the following sections.

3.1.1 Amount of N1 Table

The Amount of N1 tables are simply derived from compound interest compound calculations. They represent the amount (A) to which one unit of money (1) invested today at a given rate of compound interest (i) will accumulate over any given number of years (n). The Amount of N1 is a compounding factor in investment calculation. It is mathematically expressed as follow:

$$\text{Amount (A) of N1} = (1+i)^n \qquad \text{(i)}$$

The Amount of N1 Table forms the basis for other valuation tables. It could also be used to determine the loss of interest where capital is expended on property which lies unproductive for a long time, i.e. not yielding income. Where the interest on the capital is credited t times in a year, then the Amount becomes A of N1 = $[1+(i/t)^{tn}]$. (ii)

Arising from (ii) above,

the effective rate of interest is derived as $(1+i/t)^t - 1$ (iii)

However, where rent is paid or collected in advance as it has always been in Nigeria, the formula for the Amount of N1 becomes

Amount (A) of N1 (advance) = $A(1+i)^{n-1}$ (iv)

3.1.2 Present Value of N1 Table

The present value (PV) of N1 table gives the sum that needs to be invested today at a compound rate of interest over a number of years to accumulate to a required amount or basically to N1. The present value of N1 is a discounting factor in investment calculation. It is the reciprocal of those of the amount of N1 table and could be expressed as follow:

PV of N1 = $1/A = 1/(1+i)^n = (1+i)^{-n}$ (v)

Where the interest is credited t times in a year, then the formula becomes;

PV of N1 = $1/(1+i/t)^{tn}$ (vi)

Where rent is paid in advance, the present value of N1 becomes;

PV of N1 (advance) = $1/(1+i)^{n-1}$ (vii)

3.1.3 Amount of N1 per annum Table

While the amount of N1 consist of a single deposit of N1 capital, the amount of N1 per annum table has annual deposits of the same amount for a number of years. The amount of N1 per annum is the sum to which a series of one unit of money invested at the end of each year for a given number of years will accumulate at compound interest. It is simply the summation of a series of amounts of N1. The formula (for rent in arrears) is given as:

Amount of N1 per annum = $(A - 1)/i = [(1+i)^n - 1]/i$ (viii)

Where the rent is invested at the start of each year i.e. in advance, the formula for rent in advance becomes;

Amt of N1 p.a. (advance) = $[(1+i)\{(1+i)n-1\}]/i$ (ix)

Amt of N1p.a. (advance) = $[1+i)^n - 1] (1+i)]/i$ (x)

Amt of N1p.a. (advance) = $\{[(1+i)^{n+1} - 1]/i\}/i$ (xi)

3.1.4 Annual Sinking Fund Table

The annual sinking fund table shows the annual sum required to be invested to accumulate to one unit of money in a given number of years. It shows the sum which invested at the end of each year will accumulate at compound interest to N1. The annual sinking fund is he exact opposite or reciprocal of the amount of N1 per annum. Thus the ASF is given as;

ASF = $i/(A-1) = i/(1+i)^n - 1$ (xii)

Where rent is paid in advance, the annual sinking fund becomes

ASF = $i/(A-1)(1+i)$ (xiii)

3.1.5   Annuity N1 will Purchase Table

This describes the equal annual income stream (annuity) that will be generated over n years by a capital investment of N1. It may be used to generate the annual equivalent of a capital sum of money. The single rate annuity, rent in arrears:

S = $i/1-PV$ or $iA/A-I$ (xiv)

While the single rate annuity, rent in advance is given as:

S = $i/1-PV(1+i)$ or $iA/A-1 = iA/A-1(1+i)$ (xv)

The dual rate annuity for rent in arrears and rent in advance is given by similar formula;

S = i + s (xvi)

Where i is the remunerative interest rate and s is the accumulative interest rate (annual sinking fund)

3.1.6   Present value of N1 per annum or Years Purchase Table

The present value of N1 per annum (also called the years purchase or YP) is the present value of the right to receive N1p.a. over n years. The formula is the reciprocal of Annuity N1 will purchase. There are five variants of the years purchase formula [9]. These are:

  (i)   Years Purchase single rate
  (ii)   Years Purchase dual rate
  (iii)   Years purchase in perpetuity
  (iv)   Years Purchase in reversion to perpetuity
  (v)   Years Purchase dual rate tax adjusted.

3.1.6.1   Years Purchase Single Rate

Where rent is received in arrears, the years purchase single rate is given as:

YP = $1-PV/i = [1- 1/(1+i)^n]/i = A-1/iA$ (xvii)

Where rent is received in advance, the formula (UK version) is:

YP = $1+YP^{(n-1)} = \{1 + [1 - 1/(1+i)^{n-1}]\}/i$ (xviii)

The US version states thus:

YP = $[(1-PV)(1+i)]/i$ or $(A-1)(1+i)/iA$ (xix)

3.1.6.2   Years Purchase in Perpetuity

YP in perp. = $(1 - PV)/i = 1/i$ (xx)

When rent is in advance

YP (in perp. in advance) = $(1+i)/i$ (xxi)

3.1.6.3   YP in Reversion to Perpetuity

YP in reversion to perpetuity for rent in advance is $1/iA = 1/i(1+i)^n$ (xxii)

When YP in reversion to perpetuity (advance) = $(1+i)/iA$ (xxiii)

3.1.6.4   YP Dual Rate

The YP dual rate (rent in arrears) is the reciprocal to the annuity dual rate formula.

YP = $1/(i+s)$ (xxiv)

Where i = rate of interest i.e. the remunerative rate

s = sinking fund instalment in arrears @ s

where rent is received in advance, it is the same as the reciprocal of the annuity (rent in advance) dual rate formula. That is

$$YP = 1/(i+s) \tag{xxv}$$

3.1.6.5 YP Dual Rate Tax Adjusted.

When rent is received in arrears, YP dual rate tax adjusted is given thus;

$$YP = 1/i + ST \tag{xxvi}$$

Where s is sinking fund @ s where rent is received in arrears

$$T = 100/(100 - rate\ of\ tax) \tag{xxvii}$$

If rent is received in advance, the formula becomes:

$$YP = 1/i + ST \tag{xxviii}$$

Where: S = sinking fund @ s where rent is received in advance

$$T = 100/(100 - rate\ of\ tax) \tag{xxix}$$

4 METHODOLOGY

Final year students of estate management across three selected universities; Federal University of Technology, Akure, University of Lagos and Covenant University, Ota were purposely selected for the study. The overall student population surveyed was 220 and this is presented in Table 1. Structured and closed-ended questionnaires were administered to a total of 220 students across the three universities. A total number of 204 representing 92.7% of respondents correctly completed and returned the questionnaires. Basic descriptive statistical tools used to analyse include 5-Point Likert Scale, mean score which was subsequently ranked. Results were presented in Tables and then discussed. The opinion of respondents on teaching and learning of fundamentals of valuation as well as valuation tables were measured on a 5-Point Likert scale and the mean score of the variables subsequently ranked.

Table 1. *Population of final year students surveyed.*

Gender	FUTA	UNILAG	CU	Total
Male	62	68	11	141
Female	24	47	8	79
Total	86	115	19	220

Three tertiary institutions were covered in this study namely Federal University of Technology, Akure, University of Lagos, Akoka, Lagos and Covenant University, Ota, Ogun State. The population of students in final year is as presented in Table 1. Altogether, the population of final year students from the three institutions is 220.

Table 2. *Response Rate.*

Respondents	No. distributed	No. Retrieved	Percentage
FUTA	86	80	93.0%
UNILAG	115	109	94.8%
Covenant University	19	15	78.9%
Total	220	204	92.7%

Closed-ended questionnaires were administered to the 220 students in the final year of the selected institutions while 204 questionnaires was properly completed and returned. The overall average rate of response achieved was 92.7% and this was deemed sufficient for the analysis.

Table 3. Respondent's opinion on the teaching of fundamentals of property valuation.

Fundamental Issues in Property Valuation	VA(5)	A(4)	U(3)	FA(2)	NA(1)	MS	R
Concepts, Meaning and Attributes of Value	370	212	72	60	22	3.61	2nd
Concept of Valuation and Definitions	335	204	144	48	14	3.65	1st
Basic Investment Valuation Tables	115	156	93	88	67	2.54	6th
Nature and Quality of Investments	120	172	99	98	55	2.67	5th
Real Property Market	100	112	69	82	92	2.23	9th
Outgoing and Service Charge	95	68	87	104	70	2.08	10th
Rights and Interests in Properties	325	188	78	56	38	3.36	4th
The Valuation Process	140	120	66	64	92	2.36	8th
Valuation Methods (Traditional)	135	124	72	96	74	2.46	7th
Roles of Estate Surveyors and Valuers	350	216	75	52	29	3.54	3rd

Different aspects or topics covered under the fundamentals of property valuation at this level were listed and respondents were requested to provide their opinion on the adequacy of the teaching of these topics. The opinion obtained was measured on a 5-Point Likert scale of Very Adequate (5), Adequate (4), Undecided (3), Fairly Adequate (2) and Not Adequate (1). The mean score was calculated and result was interpreted using the adapted version of scale by [10].

- 1 – 1.5 = Not Adequate
- 1.51 – 2.5 = Fairly Adequate
- 2.51 – 3.5 = Undecided
- 3.51 – 4.5 = Adequate
- 4.51 – 5.0 – Very Adequate

The analysis presented in Table 3 reveal amongst others that respondents are of the opinion the some aspects are adequately or satisfactorily taught and such include the concepts and definitions of valuation, concept, meaning and attributes of value and roles of estate surveyors and valuers. However, amongst those aspects that respondents were not sure of whether they were satisfactorily taught or not is the basic investment valuation tables with a mean score of 2.54.

Table 4. Respondents' opinion on the teaching and learning of valuation tables.

Opinion	SA(5)	A(4)	NS(3)	D(2)	SD(1)	MS	RII
Valuation table is quite difficult to understand	240	224	69	84	35	3.20	6th
Real live application would aide the learning of valuation tables	510	236	72	38	0	4.20	3rd
Only lecturer with adequate experience should teach valuation	750	216	0	0	0	4.74	1st
Most valuation books use advanced countries' version of tables	585	196	66	32	0	4.31	2nd
It is difficult to know when to apply each of the tables	365	180	72	76	24	3.52	5th
The formula are quite complex and difficult to apply	280	152	96	92	32	3.20	6th
More time should be allocated to the teaching of fundamentals of valuation	725	59	-	-	-	3.84	4th

The opinion of the respondents was sought specifically on the teaching and learning of valuation tables in the tertiary institution with a view to highlighting the particular issues of concern among the respondents on the subject. Result was placed on a 5-Point Likert Scale of Strongly Agree (5), Agree (4), Not Sure (3), Disagree (2), Strongly Disagree (1). The result as presented in Table 4 shows that

most respondents agree with the subject of enquiry on the opinion. These include all items that have a mean score of 3.50 and above. It is also observed that respondents are generally undecided about whether valuation table is too difficult to understand or the formula are quite complex and difficult to apply.

5 CONCLUSION AND RECOMMENDATION

Concepts contained in traditional valuation schools are subject to evolution. This evolution is apparent both in definition and interpretation of the market value, withdrawal from the replacement value [11] as well as creation of new valuation methods and techniques in academic circles. The results as presented in Table 3 have shown that not all the aspects of fundamentals of property valuations are satisfactorily covered or taught in class. This might actually be attributed to the workload of the course examiner who might also be taking other courses at undergraduate and postgraduate levels as well as project supervision. Most academic staff are often engaged in other academic committees and administrative activities. All these compete for the time for teaching. These notwithstanding, it is advised that attention be paid to the issues of concern raised to which the respondents have indicated their opinion as presented in Table 4 especially with respect to the teaching and learning of valuation tables.

This study therefore recommends that lecturers make use of real live examples to teach valuation tables, only lecturers with relevant and adequate experience teach fundamentals of property valuation and that lecturer begin to use version that reflect the pattern of (rental) income in Nigeria which is in advance and not in arrears as obtained in most advanced countries. This is in line with [4] who averred that the teaching and learning of the use of valuation tables has over the years dwell more on models of rent received in arrears. This is not so in Nigeria as rent is usually collected in advance. Hence, there is the need to begin to use the model that determines value on the basis of rent in advance. Finally, it is suggested that student's centered active learning approach be adopted. In addition, a combination of teaching practices such as teaching discourse, visual representations and a variety of social interaction as well as effective teaching monitoring and feedback mechanism would also go a long way to improve the situation.

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