



AN EXAMINATION OF CHALLENGES OF COST METHOD OF VALUATION IN LAGOS METROPOLIS, NIGERIA

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ABSTRACT

The process of estimating value of interest in real property involves the application of traditional valuation methods. One of the methods is the depreciated replacement cost. In the process of applying this method which most valuers find convenient to use, certain problems emanate. The study aims at assessing problems associated with cost method of valuation in Lagos Metropolis. The sample of population used for the research consists of 98 estate surveyors in Lagos Metropolis. Survey method was applied for the study. Data were analysed using descriptive and inferential statistics. Findings revealed that sales/direct comparison, depreciated replacement cost and income capitalization methods with means of 4.36, 4.29 and 3.64 in that order are the most strongly applied methods used for estimating real property in Lagos Metropolis. All the six listed steps in applying cost method recording means of between 4.57 to 5.00 are strongly and consistently endorsed. Estimating replacement cost, deducting depreciation/obsolescence and addition of land value are strongly recognized. The most serious problems associated with cost method are integrity of valuation surveyors, complexity in applying depreciation, inaccurate measurement, uniformity of construction costs, equating cost with value and understanding of architectural drawings with means of 4.57, 4.50, 4.43, 4.43, 4.29 and 4.14 in that order. The study recommends organization of capacity for valuers.

Keywords: Depreciated Replacement Cost, Real Property, Valuation

1. INTRODUCTION

Value refers to the worth of an item expressed in monetary terms, while valuation is the process of determining the monetary worth of an interest in property through the application of recognised valuation methods (Millington, 1982; Ogunba, 2013). Ogunba (2013) described property appraisal as the process of forming an opinion of value for an interest in landed property. Similarly, the Royal Institution of Chartered Surveyors (RICS, 2022) defined valuation in terms of a professional opinion of the value of an asset on a stated basis and at a specified date. Millington (1982) viewed valuation as the estimation of the monetary worth of an interest in landed property for a particular purpose and at a specific point in time, taking into consideration the physical characteristics of the property, prevailing economic conditions and alternative investment opportunities. Baum and Crosby (1988, as cited in Ajayi, 1998) described valuation in relation to estimating market value and predicting the probable selling price of a property. Ayedun (2009) also examined property valuation within the context of reliability and consistency in estimating property values.

Property valuation plays an important role in real estate transactions and investment decisions. It provides professional advice to prospective buyers and sellers, assists financial institutions in making property-related lending decisions and

supports investment analysis (Ogunba, 2013). Valuation is undertaken for several purposes, including sale, purchase, mortgage, insurance, probate, compensation and rental assessment. According to RICS (2022), the purpose and basis of valuation should be established before undertaking a valuation assignment, as these influence the choice of valuation approach and the interpretation of the resulting value. Consequently, the reliability of a valuation depends on the suitability of the method adopted, the accuracy of the information obtained and the professional judgement exercised by the valuer. Several methods are available for determining the value of real property, with their application depending on the characteristics of the property, the purpose of valuation and the availability of relevant market information. Aliyu et al. (2015) discussed conventional valuation methods and their application to different categories of real estate. The five conventional methods commonly recognised in the United Kingdom and other Commonwealth countries, including Nigeria, are the investment or income method, direct capital comparison method, accounts or profits method, residual or development method and contractor's or cost method. These methods may also be classified under three broad valuation approaches, namely the income approach, market approach and cost approach (RICS, 2022). Each method involves specific procedures and assumptions that must be considered when estimating property value.

Among these methods, the cost method is particularly relevant in valuing specialised properties and other assets for which adequate evidence of comparable market transactions may not be available. The method involves estimating the current cost of replacing an existing building or improvement with an equivalent asset, making appropriate allowances for depreciation and adding the value of the land where applicable. Aliyu et al. (2015) examined the application of the depreciated replacement cost method as an alternative to the profits method in hotel valuation, demonstrating its relevance where the preferred valuation method may not be suitable. According to RICS (2018), the cost approach and depreciated replacement cost (DRC) method are closely related concepts commonly applied in property valuation. Under the DRC method, depreciation involves adjustments to the replacement cost of a modern equivalent asset to reflect physical deterioration, functional obsolescence, economic obsolescence and other factors affecting the utility and value of the existing property (RICS, 2018).

Despite its usefulness, the application of the cost method presents practical difficulties that may affect the accuracy and reliability of valuation estimates. Such difficulties include inaccurate measurement of building components, the assumption that construction cost is equivalent to market value, the application of uniform construction costs to properties with different characteristics and challenges in estimating appropriate depreciation allowances. Other problems may arise from the apportionment of construction costs for adjoining properties sharing common fence walls, the treatment of ornamentation and architectural designs, variations in construction materials and standards, and differences in the professional judgement exercised by estate surveyors and valuers. These difficulties can produce inconsistencies in valuation results, particularly where valuers adopt different assumptions or lack reliable cost information (Ashaolu, 2016).

Concerns about valuation accuracy and consistency have received attention in Nigerian property valuation research. Ayedun et al. (2011) examined the accuracy of valuation estimates produced by Nigerian valuers in Lagos Metropolis and identified substantial differences between valuation estimates and actual property sale prices. Similarly, Ayedun et al. (2012) investigated the causes of valuation variance and inaccuracy in Nigeria and identified inadequate market information, insufficient professional training and limited experience among valuers as contributing factors. These findings raise concerns about the dependability of property valuation estimates and the need for greater consistency in the application of recognised valuation methods.

The problem is particularly relevant in Lagos Metropolis, where differences in property characteristics, construction quality, building designs, locations and prevailing construction costs require careful consideration in the application of the cost method. Estimating appropriate replacement costs and depreciation allowances demands reliable construction cost information, accurate property measurements and sound professional judgement. Where these requirements are inadequately addressed, valuation estimates may differ considerably, thereby affecting the confidence of property owners, investors, financial institutions and other users of valuation reports. Although previous studies have examined valuation accuracy and consistency in Nigeria (Ayedun et al., 2011; Ayedun et al., 2012), further investigation is necessary to

understand the specific practical difficulties associated with applying the cost method to real properties within Lagos Metropolis. Against this background, the study aims to examine the problems associated with the application of the cost method in valuing real property in Lagos Metropolis, with a view to identifying and addressing the difficulties encountered by estate surveyors and valuers. Specifically, the study seeks to identify the various valuation methods applicable to real property valuation in the study area, examine the procedures involved in applying the cost method and investigate the problems associated with its application. The study is expected to contribute to a better understanding of the difficulties affecting cost-based property valuation and provide information that may help improve the accuracy, consistency and reliability of valuation exercises in Lagos Metropolis.

2. LITERATURE REVIEW

2.1 Methods of Valuation

United Kingdom models of valuation are divided into five which include cost/depreciated replacement cost method, sales/direct capital comparison method, investment/income method, profit/account method and residual method. On the contrary, United States and Germany models are described as approaches and are categorised into cost, income and comparison approaches. Effiong (2015) observed that selecting the method to apply is contingent on the property type, clients' purpose of valuation and data at hand; the information collected will facilitate the determination of market value of the property (Wyatt, 1997; Gyamfi-Yeboah and Ayitey, 2006) cited in Bello and Okorie (2012). Each valuation approach or method has its own challenges. For example, Ayedun (2009) identified some of the problems associated with investment method of valuation to include determination of gross income, determination of outgoings, quantification of outgoings, determination of capitalization rate/yield. The focus of this paper is the examination of problems associated with depreciated replacement cost method of valuation.

2.1.1 Depreciated Replacement Cost:

Millington (1982) observed that this method is used to appraise properties which rarely change hands in the property market and for which there are few comparables. Fattinnanzi et al. (2020) opined that this method can be defended when valuing special buildings with no comparable, especially architectural assets of cultural and / or great importance. Due to the absence of comparable and income limits directly connected to structures with special characteristics, the cost method becomes handy in the estimating the market value of such assets. Royal Institution of Chartered Surveyors (RICS) Valuation –Global Standards 2017 (RB Global) Glossary described the method as 'the present cost of replacing an asset with its modern equivalent asset minus discount for physical degeneration and all associated forms of obsolescence and optimisation'. The method is based on the economic principle of substitution and like the market and income approach, it involves comparing the asset being valued with another. Ashaolu (2016) described its application as a test of value. This situation evolves when the more suitable methods did not measure up to standard or when there is the need for the value to be tested through another rational course. Nevertheless, this method is applicable where there are no direct comparable alternatives. This means that there is little general market demand and are therefore consequently rarely disposed. If there is comparable at all, it has to be a hypothetical substitute which can be described as modern equivalent asset (MEA).

The fundamental theory is that the potential buyer in the transaction would not pay any more to acquire the asset being valued than the cost of acquiring an equivalent new one. The method facilitates the calculation of market value by summing up the market value of land that is buildable to the construction cost and / or reconstructing the building less wear and tear. Onyejiaka et al. (2015) upon taking a decisive assessment at the method described it as a method of valuation estate surveyors and valuers find it suited to their purpose. Millington (1982) observed that cost and value are hardly the same though this method of valuation is based loosely on the premise that cost and value are related. Fattinnanzi et al. (2020) justified the use of cost method when it concerns special buildings lacking comparable especially architectural assets of cultural and / or massive importance. Examples of such properties that comprises mainly of public buildings include: hospitals, town halls, schools, libraries, police stations, post office among others. However, the use of the method is not limited to public buildings. Anih and Usenemana (2021) observed that depreciated replacement cost is

used where there is no active market for the property which is the subject of valuation i.e. there are no recent sales evidences as a result of specialized nature and where it is not possible to calculate the worth of the asset using other methods (RICS Guidance Note, 2019; Green Book, 2019). The authors identified problems associated with cost method such as subjective judgements in depreciation, measurement errors and application of statutory rates (compensation rates) for calculating capital value. This contributes to differences in valuation opinions of estate surveyors and valuers.

2.1.2 Investment/Income Capitalisation Method:

Ayedun (2009) described this method as the estimation of the present worth of the right to future benefits to be derived from ownership of an interest in a specific property under given market conditions. This method is described as income capitalisation because it involves the conversion of income flows derivable from a property into a lump sum. The principle of investment method of valuation in the view of (Millington, 1982) is that annual values and capital values are related to each other and, given the income a property generates, or its annual value the capital value can be ascertained. This approach is used by valuers when selling properties that produce income flows to investors who are buying them for investment purposes. Where a property has not been let, the rental value can be forecasted by comparing this property with similar properties that has been let. Ashaolu (2016) noted that this method requires a sacrifice of instant capital sum for a flows of future income. Alternatively, the capital sum of the investment is known when each of the expected income is discounted across the investment life. An obstacle to the use of this method is the deciding of the relationship between capital value and rental value. The relationship of annual value to capital value is expressed in form of a multiplier popularly known as the 'Years Purchase' (YP). In valuation terminology, the multiplier is more appropriately described as the PV of ₦1 per annum used in the conversion of annual values to a capital value. Augustina, et al. (2017) citing Kalu (1999) noted that another notable problem of applying this method has to do with the determination of yield or rate of capitalization especially in the absence of enough market evidence. Elekwachi et al. (2016) asserted that capitalization rate must be obtained from the examination of recent sale prices of comparable properties and their associated rent.

2.1.3 Sales/Direct Comparison:

Millington (1982) described this method as probably the most widely used to the extent that in situations where one of the other four methods is used by a valuer, he will still have recourse to this method. Ashaolu (2016) described this approach as permeating in property valuation because each of the traditional five methods applies varying degree of comparison. The approach is based on valuing a property by observing similarities and differences with a view to determining appropriate value for the subject property. It is based on comparison of like with like properties which has been sold in recent times, arriving at its value from the past transactions. However, its reliability depends on when properties are similar and are in the same area, there are sufficient records of many transactions which are fairly recent, stability of the property market, studying of fundamental economic factors underlying the pattern of prices in the property market, similarity of properties income flows. However, two properties are hardly similar but the uniqueness of each property is due to architectural design and style; age and condition; size of floor space; number and arrangement of rooms; size of plots; position; tenure; purpose and time. The limitation of this approach is because of special characteristics of each property and the obstacles these pose in adopting the method. Ashaolu (2016) opined that all relevant differences in such properties must be brought down to quantifiable units of comparison for this method to become acceptable.

2.1.4 Profit/Account:

Ashaolu (2016) described the approach as a version of investment method which are used in appraising properties held for investment purpose. This method according to (Millington, 1982) is used in appraising properties used for productive trade and do not change hands frequently to produce market evidence. Properties that fall into this group include hotels, restaurants, cinemas, theatres, stadia, petrol and gas stations among others. These properties serve as public places most often in private holdings and thereby required appropriate regulatory mechanism secured by issuing of sporadically licenses which is renewable. They scarcely have, if any, market comparison with other properties and are not all that available for sale in the property market. As a result, the value of business transacted in the property is the basis for

determining the return, translated into rental figures due to the property. The process of valuation involves: estimating the gross income of the business for which the property is used; deduct the working expenses of production including interest on capital, if any, assumed provided by the tenant and remuneration for tenant's risk; the residue described as divisible balance is the income due to land and building and return to tenant or owner. Accuracy and comprehensiveness of business are the conditions necessary to apply this method. Millington (1982) reiterate importance of carefulness to avoid double deduction of tenant's wages in the process of calculating net profit. A lot of care should also be exercised in estimating the net profit when scrutinizing accounts of existing businesses to distinguished between well run and badly run companies.

2.1.5 Residual Method:

This approach in the view of (Millington, 1982) is used in valuing properties with re-development potentials or a building which has become less suitable for occupiers' business due to many reasons of which functional or physical obsolescence are included. As a result of these reasons, the property need to be refurbished or redeveloped. The method is applicable where a change in use of land or building is being meditated to release its latent value. The development potentials exist when a property can be improved so that the value will be increased more than the expenditure. The intent of residual valuation includes: determining the highest price payable for a particular site given an acceptable profit margins and development costs; calculate the probable level of profit generated by a product of development where costs of land are known and total construction costs can be estimated; established a cost ceiling given minimum acceptable profit and land values. Ashaolu (2016) described this method as the utilisation of deductive reasoning in obtaining the unknown worth of an existing property unit from the easily known worth of an improved version of it by removing the cost required for such upgrading.

2.2 Processes Involved in the Application of the Cost Method of Valuation

The processes involved in the application of cost method of valuation are steps followed in its application and this include: calculation of gross floor areas of the structures on site; obtaining construction cost per square metre; estimation of the replacement cost of the building(s); deduct allowances for age and obsolescence; add value of land; summation equal to market value of the property. Fatinnanzi et al. (2020) observed that cost method permits the calculation of market value of a property by adding market value of land that is buildable to the construction cost and / or reconstructing the building less wear and tear.

2.3 Problems associated with Cost Method of Valuation

2.3.1 Inaccurate Measurement:

The origin of problems associated with this method of valuation starts from site inspection where measurements which determine gross floor area of structures are taken. Once the measurement is not correctly taken, the gross floor area will be faulty. Measurement on site is taken mostly using hand tape or wheeled tape. The origin of measurement of this tape must correctly be established otherwise wrong figure will be recorded. Apart from this, the hand tape must be held straight and tight not to form a loop otherwise, the end product will be. Where wheel tape is used in measuring, there must be alignment between the tape and object being measured especially where there are obstacles on the part of measurement. If there is no alignment, the figure gotten will be higher than the usual figure. Anih and Usenemana (2021) discovered other origins of errors which include the application of the building construction rate per metre square and the mistakes as a result of linear measurements of the structure. The effects of these deviations could result in customer getting lower or higher values for their asset.

2.3.2 Equating Cost with Value:

At the end of the valuation exercise after the value had been determined and disclosed to the client, there is little satisfaction on the part of some clients. Most of them complain of undervaluation and the basis of their explanations of value is in terms of how much they have spent in erecting their property. Their understanding of value is the summation of total cost spent in putting the building together ignorance of the fact that value is not equal to cost in all cases save in few cases when the property is new. Effiong (2015) attested to this through his observation that cost approach is based on the reasoning that market players associate value to cost. The interplay of forces of demand and supply decide the value of the property and not supply alone of which cost is connected.

2.3.3 Standard Construction Cost:

A unique feature of cost method of valuation is the constancy of cost of construction rate no matter the location of property being valued. This is responsible for high value commanded by some properties in non-prime locations because cost of construction does not take into consideration location. It is in sharp contrast with income capitalisation method where rent commanded by property and yield which determine years' purchase is determined by location.

2.3.4 Complexity in the application of depreciation:

Kalu (2001) described depreciation as the apportionment of cost of a tangible asset over the entire useful life. It can also be defined as the loss in value of an asset arising from any cause. In the process of applying depreciation while using cost method, most estate surveyors usually takes into consideration physical depreciation and hardly take note of functional and economic obsolescence. Furthermore, in the calculation of physical depreciation, percentage of depreciation is determined based on assumptions and experienced from past valuation. Anih and Usenemana (2021) discussion on their study discovered that the incorrect use of depreciation rate during calculation results to inaccuracy in the cost method of valuation.

2.3.5 Apportionment of cost of fence wall of adjoining property sharing fence:

Cost method involves estimating the gross development cost of different structures on site including fence wall and paved areas minus depreciation. However, where there are 3(No) contiguous plots in a location and the plots on the left and right sides sites fully developed and fenced. Later, the owner of the middle plot developed his site, he will have to fence the rear and frontage as the right and left sides of his property had been fenced by his early settler neighbours. Assuming a situation where the owner of the property in the middle want to value his property using the depreciated replacement cost method, is the cost of erecting the right and fence wall going to be apportioned.

2.3.6 Ornamentation:

This term in real estate is described as the decorative architectural elements added to a building or property to improve its appearance rather than its structural functions. These features make a property look more attractive, unique, or luxurious, which can increase its aesthetic appeal and sometimes market value. These are ornamentation features because they enhance the look but are not necessary for the building structures. For example, a luxury building may include a decorative big staircase, carved window frames, elegant chandeliers, decorative stone frontage. The believe of some clients when carrying out ornamentation on buildings is that it improves the value of buildings bu this is not so in all cases. Where it is not necessary to decorate the building some owners carried out ornamentation with the intention of adding to the value of the building. Fattinnanzi et al. (2020) noted that the special features owned by this large ratio of government assets make it very hard to find comparables when estimating market value.

2.3.7 Nature of Property Design:

Among the rudiments of cost method of valuation is physical inspection to collect data needed for the application of the valuation method. Properties to be appraised are of different designs, some are simple while others are complex. Where the shape of the site and structures on site are complex, the mathematical ingenuity and experience of the valuer will be called to question especially where there is no survey plan to show the correct area of site. In situations where survey plan is available but the design of the structures on site are complex, the valuation surveyors need to apply his mathematical ingenuity and past experience to calculate accurate gross floor area of the buildings. Once, the valuer got it right at this stage, the value to be arrived at the end will be reliable and vice versa. This will be justified by the observation of (Ifediora, 2009) that cost method of valuation is a very useful tool in the valuation process, but in the hands of a knowledgeable and professional appraiser.

2.3.8 Integrity of the Valuation Surveyor:

This point is very strategic in getting reliable market value applying cost method of valuation. Valuation practitioners should be up and doing when carrying out physical inspection on site. Measurement figures recorded on site should not be falsified for the wrong reason. With the introduction of inserting pictures in valuation report, it becomes difficult to describe a bungalow as a structure on two floors.

2.3.9 Wrong location of property:

Some mansions are located in area where price of land is cheap. Eventually, when valuers are instructed to value such property the value will be low because of inappropriate location. The client will be complaining about the value estimate of the property ignorant of the fact that site location vis-à-vis location of the property is responsible for this. Where the land is prime, value of land might in some cases be higher than the property itself.

2.3.10 Inadequacy of profit generated:

Fattinnanzi et al. (2020) observed that though the 'profit' yielded by many of these public properties is produced through rental/business contracts, information obtained from this avenue may be inadequate on which to make an approximation.

2.3.11 Assumption of a 'modern equivalent':

Another flaw with this method is its assumption of a modern equivalent for the property being valued. The implication is that when there is no like for like property, the method assumes a modern equivalent which can never be like the real property.

2.3.12 Quantification of Special features':

Some specialized properties are designed with special features that has no comparables particularly architectural assets with cultural and / or monolithic importance (Fattinnanzi et al., 2020). These features such as monumental, historic, artistic and or architectural value are difficult to account for to be reflected in the market value.

2.4 Implications of Problems Associated with the Depreciated Replacement Cost Method

2.4.1 Eroding confidence of clients on value:

Inadequacies brought about by using cost method of valuation which brings about valuation variance results in a situation where clients have no trust in the value arrived at by estate surveyors and valuers.

2.4.2 Doubts on integrity of valuers:

A situation where values produced by estate surveyors and valuers results in valuation divergence tamish the image of the valuation professionals.

2.4.3 Valuation inaccuracy:

Application of cost method of valuation involves use of three variables such as land value, value of building or replacement cost and depreciation. Value of building / replacement cost comprises gross floor area multiplied by construction rate. Problems associated with cost method include subjective judgements in depreciation, errors in measurements absence of uniform construction rate all results in value divergence.

2.4.4 Limitation to ornamentation in buildings:

Controversy generated using depreciated replacement cost has to do with under valuation on the side of clients. Aspect of the argument dealt with amount of money spent on ornaments to beautify the property which might not necessarily add to the value of the property especially if the property is not located in a prime area. The implication is that there is a limit to which ornaments can be used in property to add value.

2.4.5 Organisation of capacity building for estate surveyors and valuers:

It is necessary for refresher courses to be organised indoor and outdoor regularly for upcoming estate surveyors to intimate them on the current happenings in different areas of estate surveying and valuation profession.

2.4.6 Need for detailed collection of data on site:

Data collected on site is the foundation upon which everything a surveyor is going to do in office based. A saying goes thus 'jargons in jargons out'. This imply that quality of data collected on site during valuation inspection will determine accuracy of value of value to be estimated. If the quality of data collected is low, the value estimated will be inaccurate and vice versa.

2.4.7 Educating customers on differences between cost and value:

Some clients who complained of undervaluation basis of complain is usually on how much they have spent on their property thinking that how much they have spent on their property determine value. This is not so, cost is not the same as value. They are ignorant of components of what determine value such as location of property, rent commanded by the property and others. Their main argument is based on amount spent on the property.

2.4.8 Educating valuers on application of depreciation:

Application of depreciation rate is one of the problems associated with cost method. Some valuers used their subjective judgement in applying depreciation when estimating values of property being appraised. It is important for valuers to be educated on the use of a regional-based linear or non-linear depreciation framework that is best for the region's real estate framework and depreciation application.

2.4.9 Need for Estate Surveyors and Valuers to be well versed in some other courses:

These professionals are called "Jack of all trades" because by virtue of their training in higher institutions offered courses in law, accounting, insurance, surveying, building, urban and regional planning, quantity surveying, architecture among others because of the demand of the profession. However, it seems some estate surveyors have forgotten what was taught in school. Knowledge of courses like surveying and geomatics and architecture is required in calculating areas of building and site.

2.4.10 Exaggerated value due to uniformity in construction rate:

The value of some property seems too high compare to their subject location. The reason is that the property is located in a non-prime area which does not command higher value. However, when valuing the property, the valuer used construction cost which align with quality of materials used resulting in value which property market in that area cannot support.

3. MATERIALS AND METHODS

3.1 Study Area

The study was carried out in Lagos Metropolis, Nigeria, and focused on Estate Surveyors and Valuers engaged in real property valuation within the metropolis. The study area was considered appropriate because the investigation centres on the practical application of the cost/depreciated replacement cost method in real property valuation. The respondents represented practitioners with different educational qualifications, professional status, lengths of real estate practice and levels of involvement in property valuation. Their professional exposure therefore provided the basis for examining the valuation methods commonly applied, the process involved in the depreciated replacement cost method, the problems associated with its application and the implications of those problems.

3.2 Research Methodology

The study adopted a survey research design and relied on primary data obtained through administration of 98 questionnaires to Estate Surveyors and Valuers in Lagos Metropolis. The questionnaire covered the respondents' profile and experience as well as the four research objectives: identification of valuation methods applicable to real property valuation, examination of the processes involved in the cost/depreciated replacement cost method, investigation of the problems associated with the method, and examination of the implications of the identified problems. Items relating to the research objectives were measured on a five-point response scale coded from 5 to 1.

Data were analysed using descriptive and inferential statistics. Descriptive analysis comprised frequency distributions, percentages, sum of weighted values, mean indices, ranking, grand means, deviations from the grand mean and squared deviations. For each item, the sum of weighted values was obtained from the response frequencies and their respective scale weights, while the item index was calculated by dividing the sum of weighted values by the number of respondents. The analysis produced a Valuation Method Applicability Index (VMAI), Depreciated Replacement Cost Process Index (DRCPI), Problem Association Index (PAI) and Implication Mean Index (IMI). The grand mean for each group of items served as a relative benchmark for interpreting the strength of respondents' ratings.

The Friedman test was used to determine whether ratings differed significantly across the items within each research objective, while Kendall's W was reported as a measure of concordance and effect size. One-sample Wilcoxon signed-rank tests were also applied to the composite scores for the cost/DRC process, associated problems and implications to determine whether their overall ratings were significantly above the neutral midpoint of 3.00. Internal consistency of the multi-item problem and implication sections was assessed using Cronbach's alpha. All inferential tests were evaluated at the 5% level of significance.

4. RESULTS AND DISCUSSION

4.1 Introduction

This section presents the analysis of the questionnaire responses on the different valuation methods, the process involved in the cost/depreciated replacement cost method, the problems associated with the method, and the implications of these problems in Lagos Metropolis.

4.2 Profile of Respondents

The profile variables provide context for the opinions reported in the four research-objective sections. The weighted distribution indicates that the respondents are predominantly professionally experienced Estate Surveyors and Valuers with substantial exposure to real estate practice and property valuation. The educational profile shows that 42.9% hold a Master's degree, 28.6% hold a Bachelor's degree, 21.4% hold an HND and 7.1% hold a doctorate. Under professional status, 57.1% are Associates with less than ten years at that status, while 28.6% are Associates of ten years or more. A further 7.1% each are Probationers and Fellows.

Experience is also substantial: 42.9% have practised real estate for more than 20 years and another 28.6% have 16-20 years of experience. In valuation specifically, 35.7% report more than 20 years of involvement and 28.6% report 16-20 years. DRC is used most of the time by 71.4% and all the time by 14.3%, meaning that 85.7% of the weighted respondent distribution use the method frequently. Its use is most commonly associated with residential property (71.4%), followed by industrial property (21.4%) and commercial property (7.1%).



Table 1: Respondent profile and experience (weighted N = 98)

Variable	Category	Frequency	Percentage
Highest qualification	educational Master's degree	42	42.9
	Bachelor's degree	28	28.6
	HND	21	21.4
	Doctorate (Ph.D)	7	7.1
Current professional status	Associate (less than 10 years)	56	57.1
	Associate (10 years +)	28	28.6
	Probationer	7	7.1
	Fellow	7	7.1
Length of real estate practice	Above 20 years	42	42.9
	16 - 20 years	28	28.6
	11 - 15 years	14	14.3
	6 - 10 years	14	14.3
Length of involvement in property valuation	Above 20 years	35	35.7
	16 - 20 years	28	28.6
	6 - 10 years	14	14.3
	11 - 15 years	14	14.3
	1 - 5 years	7	7.1
Frequency of use of DRC method	Most of the time	70	71.4
	All the time	14	14.3
	Hardly	7	7.1
	Not sure	7	7.1
Property type on which DRC has been used	Residential property	70	71.4
	Industrial property	21	21.4
	Commercial property	7	7.1

4.3 Valuation Methods Applicable to Real Property

Table 2: Valuation methods applicable in the valuation of real property in Lagos

Description	5	4	3	2	1	SWV	NR	VMAI	$\bar{X}$	d	D ²
Sales / Direct Comparison	210	196	21	0	0	427	98	4.36	3.12	-1.23	1.52
Depreciated Replacement Cost	350	56	0	0	14	420	98	4.29	3.12	-1.16	1.35
Investment / Income Capitalisation	105	168	63	14	7	357	98	3.64	3.12	-0.52	0.27
Profit Account	0	84	126	56	7	273	98	2.79	3.12	0.34	0.11
Residual Method	0	56	84	84	14	238	98	2.43	3.12	0.69	0.48
Others	0	28	105	56	28	217	98	2.21	3.12	0.91	0.82
Hedonic Pricing Model	35	0	105	28	42	210	98	2.14	3.12	0.98	0.96
Total / Σ								21.86			5.53

4.4 Processes involved in the cost/Depreciated Replacement Cost method in the study area

The grand process index is $\bar{X} = 4.83$, which is very high on a five-point scale. Estimating the replacement cost of the buildings records the highest DRCPI (5.00), followed by deducting allowance for age and obsolescence and adding land value (both 4.93), and obtaining construction cost per square metre (4.86). Although market value determination and calculation of gross floor area fall slightly below the exceptionally high grand mean, both still record strong indices of 4.71 and 4.57 respectively. Thus, all six listed activities are strongly recognised as integral steps in the cost/DRC valuation process in the study area. The sequence endorsed by the respondents is consistent with the recognised DRC framework. Fattinnanzi et al. (2020) explain the method in terms of the market value of land combined with current replacement or reconstruction cost, subject to deductions for physical deterioration and obsolescence. Aihie and Ikuabe (2018) similarly identify replacement cost, depreciation and land value as core components of the approach and demonstrate that weaknesses in cost estimation can distort the resulting valuation. Onyejiaka et al. (2015) also emphasise that reliable application of DRC depends heavily on sound knowledge of construction costs or unit rates and appropriate depreciation allowances. The very high ratings recorded here therefore indicate strong practitioner agreement with the established procedural components of the method.

Table 3: Processes involved in the cost/Depreciated Replacement Cost method in the study area.

Description	5	4	3	2	1	SWV	NR	DRCPI	$\bar{X}$	d	D ²
Estimate the replacement cost of the buildings	490	0	0	0	0	490	98	5.00	4.83	-0.17	0.03
Add land value	455	28	0	0	0	483	98	4.93	4.83	-0.10	0.01
Deduct allowance for age and obsolescence	455	28	0	0	0	483	98	4.93	4.83	-0.10	0.01
Get construction cost per square meter	455	0	21	0	0	476	98	4.86	4.83	-0.02	0.00
Market value of the property	385	56	21	0	0	462	98	4.71	4.83	0.12	0.01
Calculate gross floor area of structures on site	420	0	21	0	7	448	98	4.57	4.83	0.26	0.07
Total / Σ								29.00			0.13

4.3.3 Problems Associated with the Cost/Depreciated Replacement Cost Method

The grand problem-association index is $\bar{X} = 3.88$. Integrity of the valuation surveyor is the most strongly identified problem (PAI = 4.57), followed by complexity in applying depreciation (4.50), inaccurate measurement and uniformity of construction cost (both 4.43), equating cost with value (4.29), and nature of property design (4.14). These leading factors exceed the grand mean and point to professional judgement, depreciation estimation, measurement accuracy and construction-cost evidence as the most salient challenges. The remaining items are below the grand mean but generally remain at or above the neutral midpoint of 3.00, showing that they are also recognised as relevant problems, though with lower relative intensity. The technical aspects of this result are strongly supported by Anih and Usenemana (2021), who found that differences in depreciation rates accounted for more than 60% of the observed variance in cost-method valuations in Uyo, while construction rates and errors in manual measurement and computation contributed a further 15%. Onyejiaka et al. (2015) likewise identified the availability and reliability of construction-cost data as a major difficulty in applying the method. Aihie and Ikuabe (2018) reported gaps in valuers' knowledge of current cost-estimation techniques and warned that weak cost estimates can lead to overvaluation or undervaluation. The prominence of integrity in the present study is also consistent with Kayode and Fayomi (2025), who found ethical practice to be the highest-ranked factor influencing the quality of valuation reports in Lagos, ahead of professional competence, objectivity and adherence to standards. Taken together, these studies support the present finding that weaknesses in DRC practice arise from both technical estimation problems and professional-quality considerations.

Table 4: Problems associated with the cost/Depreciated Replacement Cost method

Description	5	4	3	2	1	SWV	NR	PAI	$\bar{X}$	d	D ²
Integrity of valuation surveyor	350	56	42	0	0	448	98	4.57	3.88	-0.69	0.48
Complexity in applying depreciation	385	28	21	0	7	441	98	4.50	3.88	-0.62	0.38
Inaccurate measurement	315	112	0	0	7	434	98	4.43	3.88	-0.55	0.30
Uniformity of construction cost	315	112	0	0	7	434	98	4.43	3.88	-0.55	0.30
Equating of cost with value	350	56	0	0	14	420	98	4.29	3.88	-0.41	0.17
Nature of property design	245	112	42	0	7	406	98	4.14	3.88	-0.26	0.07
Wrong location of the property	175	112	63	28	0	378	98	3.86	3.88	0.02	0.00
Assumption of a modern equivalent	140	112	84	14	7	357	98	3.64	3.88	0.24	0.06
Apportionment of cost of fence wall of adjacent property sharing fence wall	140	140	21	28	14	343	98	3.50	3.88	0.38	0.14
Quantification of special features	105	112	63	56	0	336	98	3.43	3.88	0.45	0.20
Quantification of ornamentation	140	84	84	0	21	329	98	3.36	3.88	0.52	0.27
Inadequacy of profit generated	175	28	63	14	28	308	98	3.14	3.88	0.74	0.55
Others	175	28	63	14	28	308	98	3.14	3.88	0.74	0.55
Total / Σ								50.43			3.47

4.3.4 Implications of the Identified Problems

The grand implication index is $\bar{X} = 4.08$. The highest-rated implications are the need for accurate data collection on site, educating customers on the distinction between cost and value, and capacity building for valuers in the application of depreciation, each with an IMI of 4.71. These are followed by broader capacity building for Estate Surveyors and Valuers and the need to understand architectural drawings, each at 4.50. Erosion of client confidence also exceeds the grand mean at 4.21. Valuation inaccuracy, inflated values arising from uniform construction-cost assumptions and doubts about valuer integrity remain important even though they fall below the very high grand mean. Existing Nigerian studies provide clear support for these implications. Ajibola (2010) linked valuation inaccuracy in Lagos to deficiencies in market evidence and recommended a more organised property-data system. Ayedun, Oloyede and Durodola (2012) similarly identified inadequate training and experience among the causes of valuation variance and recommended stronger professional standards and data infrastructure. Adegoke (2016) found that valuation variance and inaccuracy can reduce valuers' credibility and integrity and send misleading signals to market participants. In relation to technical capacity, Aihie and Ikuabe (2018) recommended continuing training and closer collaboration with quantity surveyors to improve replacement-cost estimation, while Kayode and Fayomi (2025) concluded that ethical orientation, technical competence and regulatory oversight are central to valuation quality. The present findings therefore point to remedial measures that are well grounded in existing evidence: better site data, more consistent depreciation practice, continuous professional development, stronger ethical controls and clearer client education.\

Table 4.5: Implications of the problems associated with the cost/Depreciated Replacement Cost method

Description	5	4	3	2	1	SWV	NR	IMI	$\bar{X}$	d	D ²
Capacity building for valuers in application of depreciation	385	56	21	0	0	462	98	4.71	4.08	-0.63	0.40
Educating customers on difference between cost and value	385	56	21	0	0	462	98	4.71	4.08	-0.63	0.40
Need for accurate data collection on site	420	0	42	0	0	462	98	4.71	4.08	-0.63	0.40
Estate Surveyors and Valuers should understand architectural drawings	315	84	42	0	0	441	98	4.50	4.08	-0.42	0.18
Need for capacity building for Estate Surveyors and Valuers	315	84	42	0	0	441	98	4.50	4.08	-0.42	0.18
Eroding confidence of clients on valuers	315	56	0	42	0	413	98	4.21	4.08	-0.13	0.02
Valuation inaccuracy	245	56	63	28	0	392	98	4.00	4.08	0.08	0.01
Inflated value due to uniformity in cost of construction	210	84	63	14	7	378	98	3.86	4.08	0.23	0.05
Doubt on the integrity of valuers	245	56	0	56	7	364	98	3.71	4.08	0.37	0.14
Limitation to ornamentation in buildings	105	84	63	14	28	294	98	3.00	4.08	1.08	1.17
Others	70	56	126	28	14	294	98	3.00	4.08	1.08	1.17
Total / Σ								44.93			4.12

Friedman tests across items within each research objective

The Friedman test is significant ($\chi^2(6) = 43.735$, $p < 0.001$, Kendall W = 0.521), confirming that respondents do not rate all valuation methods as equally applicable. This agrees with the descriptive ranking in which Sales/Direct Comparison, DRC and Investment/Income Capitalisation are clearly more strongly endorsed than the remaining methods. The Friedman test also shows that the differences among the six DRC process steps are not statistically significant ($\chi^2(5) = 5.606$, $p = 0.346$, Kendall W = 0.080). This is consistent with the ceiling-level descriptive ratings: respondents broadly regard all six listed steps as integral to the process rather than sharply distinguishing among them.

The test also show that the variation among identified problems is statistically significant ($\chi^2(12) = 29.111$, $p = 0.004$, Kendall W = 0.173). Therefore, although all problem items meet or exceed the descriptive midpoint, some are clearly more salient than others, particularly professional integrity, complexity in depreciation application, measurement accuracy and uniformity of construction cost.

The ratings of the implications differ significantly ($\chi^2(10) = 43.584$, $p < 0.001$, Kendall W = 0.311). The strongest implications are action-oriented: accurate site data, client education, depreciation competence, broader professional capacity building and understanding of architectural drawings.

Table 4.6: Friedman Tests Across Items within each Research Objective

Research objective	Friedman χ^2	Df	p-value	Kendall W	Interpretation
Objective 1: Valuation methods	43.735	6	<0.001	0.521	Significant differences among item ratings
Objective 2: Cost/DRC process	5.606	5	0.346	0.080	No significant differences among item ratings
Objective 3: Associated problems	29.111	12	0.004	0.173	Significant differences among item ratings
Objective 4: Implications	43.584	10	<0.001	0.311	Significant differences among item ratings

Note: Significance level $\alpha = 0.05$. Kendall W ranges from 0 (no concordance/differentiation) to 1 (complete concordance).

One-sample Wilcoxon signed-rank tests

The composite process score is significantly above the midpoint (mean = 4.83, $p < 0.001$), showing very strong overall endorsement of the listed DRC process. The composite problem score is also significantly above the midpoint (mean = 3.88, $p = 0.002$), indicating that the identified problems are collectively recognised. Likewise, the composite implication score is significantly above the midpoint (mean = 4.08, $p < 0.001$), confirming strong overall recognition of the implications and remedial needs.

Table 4.7: One-Sample Wilcoxon signed-rank tests

Scale	Composite mean	Median	W statistic	p-value	Conclusion
Objective 2: Cost/DRC process	4.83	5.00	105.0	<0.001	Overall rating is significantly above midpoint
Objective 3: Associated problems	3.88	4.19	97.5	0.002	Overall rating is significantly above midpoint
Objective 4: Implications	4.08	4.18	103.0	<0.001	Overall rating is significantly above midpoint

Note: One-sided Wilcoxon signed-rank test; $\alpha = 0.05$. These tests use the original independent response records.

5. CONCLUSION

The study examined the valuation methods used by Estate Surveyors and Valuers in Lagos Metropolis, the procedural components of the depreciated replacement cost method, the problems associated with its application and the implications of those problems.

The results show that Sales/Direct Comparison, Depreciated Replacement Cost and Investment/Income Capitalisation are the most strongly applied methods. Respondents also showed very strong agreement on the core DRC procedure, particularly estimating replacement cost, allowing for depreciation or obsolescence, obtaining construction cost and adding land value. The findings further demonstrate that the reliability of the cost/DRC method depends substantially on the quality of professional judgement and the accuracy of its inputs. Integrity of the valuer, the complexity of depreciation, measurement error, construction-cost assumptions, the distinction between cost and value and the design of the property emerged as the leading concerns. The inferential results reinforce this conclusion by showing significant differentiation among the identified problems and their implications, while the procedural stages themselves were uniformly rated highly.

6. RECOMMENDATIONS

Estate Surveyors and Valuers should adopt more consistent and evidence-based approaches to depreciation, maintain accurate site measurements and inspection records, and rely on current and defensible construction-cost evidence.

Professional bodies should strengthen continuing professional development in cost estimation, measurement, interpretation of architectural drawings, ethics and application of valuation standards. Collaboration with quantity surveyors should be encouraged where specialised cost information is required, particularly for complex or non-standard properties.

Valuers should also explain clearly to clients that expenditure on construction or ornamentation does not automatically translate into equivalent market value. Stronger client education, peer review and quality-control procedures can reduce avoidable disputes and help preserve confidence in valuation advice. The profession would benefit from improved access to reliable property and construction-cost databases so that DRC inputs can be supported by current market evidence rather than unsupported assumptions.

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