Straight Line Method of Depreciation and Financial Information Quality of Nigerian Service Companies

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Abstract

Financial information quality had not received the necessary attention it deserves until recent years following reported cases and consequences of corporate scandals and failures. In adopting generally accepted accounting principles, the preparers of financial statements seem to believe that they are providing adequate and reliable financial information. However, this may not meet the diversified needs of the investors and prediction ability for future reliance. This may be as a result of adopting inappropriate financial and accounting policy capable of influence misleading operational result that can lead to corporate failures. One aspects of the inappropriate policy for the purpose of this study is depreciation policy. One basic problem that needs to be addressed is whether financial information which has features of high quality standard will automatically provide solution to this inappropriate policy? This study focuses on this gap but in particular reference to straight line method (SLM) of depreciation that is commonly being adopted in the preparation and presentation of financial statements in Nigeria. The objective is therefore to ascertain the extent to which the SLM of depreciation can influence financial information quality of service companies in Nigeria. Primary data were collected through questionnaire. The retrieved questionnaires were analysed using logistic regression. The study finds that straight line method of depreciation influences financial information quality of service companies in Nigeria. The study recommends that despite the general use of straight line method of depreciation, other methods of depreciation should be encouraged for adoption in order to provide an opportunity for comparing depreciation results. The objective is to improve knowledge of depreciation methodology for better option.

Keywords: Depreciation, Financial information quality, Logistic regression, Straight line method

1. Introduction

Financial information quality has not been receiving the necessary attention it deserves until recent years following reported cases and consequences of corporate scandals and failures abroad and in Nigeria. These include organizations like the Tyco, Parmalat, Enron, Xerox, African International bank, Savannah Bank, Arewa textile and few others. Maintenance of high quality accounting standard in preparing financial statements is equivalent to financial information quality. Therefore, the information contents should have the ability and weapon to disclose or detect any significant defects in the financial reporting. Alternatively, the financial information quality should be seen as an attribute that can influence the users in making predictions about the present outcomes and to confirm some prior expectations. Bello (2009) is of the view that accounting information should have the ability of being relevant if the required minimum quality of representative financial reporting is recorded.

Financial information quality is expected to reflect the true and correct financial picture with which financial reports of an enterprise convey about its financial transactions and a time non-financial transactions in a particular period. One main objective of financial reporting is to present, communicate and educate the users, mainly the investors and potential investors about the financial performance and position of a company in order to assist them in taking investment and other financial decisions. True and correct financial picture means that the financial information can be relied upon by those who will use it to adjudicate the economic events. This is because reliability of financial information is seen as having the worth of representation, verifiability and faithfulness.

Another feature of correct picture in this context is relevance. Accounting information should be relevant if the information content can command the users to form independent opinions about the present conditions, events and that they can predict the future outcomes of a company. In this regard, the financial information must be timely and must have a feedback value. Comparability is another quality required of correct representation of information quality. The financial information should provide for comparison even within the same company over the years’ performance and which can also form the basis of future prediction. Besides, the financial information can be compared with similar information in other similar companies within the same industry.

This study focuses on the straight line method (SLM) of depreciation, because it is assumed to be one component that gives rise to the proxy of financial information quality not only in the service industry but most industries particularly in
the topic including its method. Anao (2009) states that, depreciation is a concept which attempts to describe the
value of depreciation on assets and earnings is enormous that requires study. From any financial statements of an
enterprise, depreciation plays an important role in determining the level of operating result; as inappropriate adoption of
depreciation method will adversely affect the reported profit or loss. However, in the minds of almost all investors or
potential investors and other stakeholders today, the operating result (or profit) of an enterprise is always the yard stick
or the bottom line for measuring financial performance irrespective of how the figure is arrived at. For instance, there
may be two companies with similar paid up share capital and common characteristics with reported profits of say N3m
and N3.4m respectively but the investors may conclude that the company with N3.4m is better. This may be far from
the true picture if the value of depreciation is known even though it does not involve cash movement.

The impact of adopting this policy can lead to declaration of incorrect and misleading profits, earnings then down to
financial scandals of all types. One basic problem that needs to be addressed is whether financial information which has
features of high quality standard will automatically provide solution to the adoption of inappropriate financial and
accounting policy? This study focuses on this gap but in particular reference to straight line method (SLM) of
depreciation that is commonly being adopted in the preparation and presentation of financial statements mainly in
Nigeria. There is however, a freedom for a company to adopt any particular method of depreciation having regard to the
nature of its operation, yet most of the companies in Nigeria adopt SLM.

The objective of this study is to ascertain the extent to which straight line method of depreciation can influence financial
information quality of service companies in Nigeria. Null hypothesis is formulated in line with the objective to provide
an opportunity to test the responses of the respondents. The hypothesis is that, the straight line method of depreciation
has no significant impact on financial information quality of service companies in Nigeria. Because of the nature of this
study, questionnaire will be administered in order to achieve the objective. The significance and possibly contributions
of this work are in three specific areas. The first area is the investors and potentials investors as it will educate them on
how depreciation value can affect the operating profit (or loss) and the value of fixed assets in the statement of financial
position which together form the basis of their decisions making process. The second area is the preparers of financial
statements and accounting policies makers by taking into consideration the impact of depreciation on the financial
information quality. The last set is the researchers, students and other users of financial information by preparing their
minds to the relevance of straight line method of depreciation on the financial information quality.

The work is divided into five parts. The first part represents general introduction to the study including motivational
factors for undertaking the assignment. Part two reviews the relevant literature to provide an insight into the work while
part three identifies the methodology adopted. Part four discusses the results from data analysis and the final part states
the conclusion and recommendation of the study.

2. Review of Related Literature

2.1 Concept of Depreciation in the Financial Information Quality

The purpose of depreciation of non-current or fixed asset is to ensure that organizations appropriately allocate and
spread all the immediate costs associated with the acquisition of that asset to the expected number of its useful life. It is
provided for in accounting to enable a set of financial statements’ figures reflect true and fair values. The focus is to
measure near accurate actual consumption of the asset that is used up in an accounting period either directly or
indirectly in generating income in that business. The purpose of accurate and proper depreciation value is to ensure that
the reported information in the financial statements reflect true and correct view to enable the users have no fear in
taking appropriate and reliable investment and financial decisions.

Depreciation is one financial language which both in theory and practice has been receiving less attention by a good
numbers of researchers, authors and practitioners despite its significant position in the financial reporting. Because
depreciation has not been attracting the interest of financial or cost accounting contributors, there are few literatures on
the topic including its method. Anao (2009) states that, depreciation is a concept which attempts to describe the
Depreciation is that part of the original cost of a non-current asset that is consumed during its period of use by the business (Wood and Sangster, 2008). The authors’ emphasis is that the yearly amount of depreciation should be based on an estimate of how much of the overall economic usefulness of the asset has been used up in that accounting period. Ahmed (2011) conceptualizes depreciation as that portion of the total cost that is to be allocated for consumption in that year. It is a non-cash expense charged in the income statement in accordance with one of the most important accounting principles – matching principle. In the words of Epstein and Mirza (2003) and Meigs, Williams, Haka and Better (2001), depreciation is a method of cost allocation and not asset valuation hence it does not take into account any changes in the market value. The concept of depreciation remains an idea which does not accurately translate into precise measurement. Where for instance, there is an agreement as to what should be the value of depreciation, the problem still remain that there is no objective basis of establishing how much of the value has been contributed by the asset to the period of production or revenue (Anao, 2009).

From a few available literatures, the Nigerian accounting bodies including accounting practitioners do not develop, and direct any particular method of depreciation to be adopted and used in a particular industry. This gap therefore leaves the service industry and managements to select and adopt whatever method of depreciation they believe can provide appropriate and commensurable depreciation on the assets that are consumed in a particular accounting period. In text books and few literatures, there are various methods of depreciation. Some of them include straight line, diminishing balance often referred to as reducing balance, sum of digits, economic depreciation, annuity, replacement/renewal, depreciation fund, insurance policy, revaluation, depletion, machine hour rate and production unit that are either put into used or not. Other methods that may be contemplated for adoption or otherwise but only introduced by this study include: direct hiring cost, capital allowance, and optimal pay back cost. The management of the Nigerian service industry often does not take the opportunity of adopting more than one or two of these methods to test in order to find out which one would provide better/best result in the industry.

Ahmed (2011) is of the view that any method selected is a judgmental matter but conceptually, one should select a method that most closely approximate the actual pattern of use of the asset so that the cost allocation is appropriate. Anao (2009) believes that the nature of the various types of assets employed and used by the businesses should provide for the justification in deciding the measurement of depreciation. This view ordinarily should have been valid and then remove the complexity in measuring part of the asset that has been consumed in a particular financial period, but this is not considered in practice, at time even in the financial accounting text books. Hirani (1995) emphasizes that method of depreciation should be carefully selected by an enterprise because the depreciation charge will have a significant effect on the results of financial position particularly in a case of capital intensive unit.

### 2.2 Straight Line Method as Accounting Depreciation

In Nigeria, straight line method of depreciation is usually adopted in almost all the industries, but there is no clear justification for adoption other than its simplicity in understanding and application (Adah & Dogarawa, 2013). This SLM is in line with what is obtainable in most companies in America. The study of Keiso, Waygandt and Warfield (2008) revealed that about 82% of American companies used SLM of depreciation, 4% adopt reducing balancing approach and the remaining 14% of the companies adopt other different methods. However, most of the British companies will prefer to adopt reducing balancing method (Ahmed, 2011). In Bangladesh, SLM, reducing balancing and units of production methods of depreciation are in use (ICAB, 2008).

Despite the benefits accruable to the adoption of SLM of depreciation such as simplicity of calculation and understanding, there are numerous risks attached to it that requires diagnosis. Some of which include i) difficulties experienced in trying to find evidence to support the critical assumption of the useful life when trying to depreciate long-lived assets like buildings, roads, and others ii) the method is often applied based on age of the asset rather than obsolescence iii) it assumes that the fixed asset renders equal service every year which realistically is not correct iv) the method fails to consider expenses of repairs and maintenance that may occur which will increase the value potential of the assets v) like in some methods, it does not provide funds for renewal or replacement of the asset after its expiration vi) one difficulty is the calculation of depreciation when additions are made during a year and vii) Adjustment for any difference in depreciation value that may arise from the use is ignored.
Ahmed (2011) states that the SLM of depreciation is based on two unrealistic theories that the benefits to be received from the asset will be the same each period and it expects the maintenance and repair cost to be constant over time. Only SLM is considered for the purpose of review because practice has shown that it is the most common method that is practised in Nigeria.

In Nigerian accounting practice today and tracing behind, the commonest depreciation method being adopted is the straight line (Adah & Dogarawa, 2013). The SLM is a replica of capital allowance, not only the method but the rate is similar to capital allowance rates provided by the Companies Income Tax Act (CITA, 1979). The method is applied irrespective of the use of the asset in an organization.

As noted by Adah (2007), capital allowance rates are stable because of the liberty to adopt any method of depreciation by organizations which definitely will not provide similar capital allowances for them. Reasons advanced for the capital allowance to serve as depreciation include the following: i) to avoid liberty of depreciation policies by organizations ii) the need to standardize depreciation rates and its methods for common application iii) the need for consistency in granting depreciation as capital allowance iv) the need for control of capital expenditure at all times and v) to allow uniformity in treating rates and methods of depreciation.

### 2.3 Challenges in the Accounting Depreciation

The critical challenge in depreciation is how to realistically determine how much cost of the fixed asset is attributable to the overheads that must be taken off from gross profit (or added to gross loss) in a financial year or accounting period. Another challenge is how much of the fixed asset value should be provided for or carried forward that will fit into the number of expected useful life with or without the threat of going concern. Literatures (Popoola, (2011); Anao (2009) and Wood and Sangster (2008) have shown that depreciation value is the function of i) original cost of the asset ii) estimated useful life and iii) the residual or salvage value of the assets after retiring from the active service. Unfortunately, out of these variables, it is only one (that is original cost) that can be determined with certainty. It is always difficult to predict how long an asset will provide for a cost-effective service (Financial Sustainability Program, 2008). Expected useful life is also another strong issue that is not easy to estimate even because of repairs and maintenance, usage and break down, yet it must be approximated for the purpose of estimating realistic depreciation.

Hulten and Wykoff (1996)’s study states that accounting depreciation is only capable of providing knowledge of the historical cost of investment, which is not enough to determine the amount of productive capacity in a firm. These contributors noted that the net book value after taking the computed depreciation only intended to approximate the present value of the income accruing to an asset but can generate unresolved problems. A similar view is that of Zajac (1995) who is of the opinion that the use of accounting depreciation may lead to a net book value that may be far from resalable value. This may tantamount to give wrong impression to the shareholders and other principal stakeholder about the true and correct value of the assets.

### 2.4 Depreciation Method and Financial Information Quality

Appropriate and adequate accounting policies are the function of financial information quality. There are various accounting policies that are being adopted across organizations in the preparation and presentation of accounts and its information. The policies are adopted because of the belief that they are satisfactory in generating high quality financial information required by the users. However, these are adopted not because they are the best or better than any alternative options, but because the preparers of the accounts and the policies makers often think less about the relevance of such policies on financial information quality. At times, the accounting policies will differ from what are obtainable in the accounting practice, that the preparations of the accounts and notes thereof.

Recognition of income may not be in agreement with the stated policy so also is the valuation of stock, depreciation, recognition of income and provision on non-performing assets and others. The most worrying aspect of an accounting policy that is often misconstrued is the depreciation approach. For instance, an organization may decide to adopt a particular method of depreciation to capture the value of assets used in an accounting period, but the management will have no justification for adopting such method. This is often carried out without considering the nature of the operations and the use of the assets in the operations; allowing the method to continue for so long a time without contemplating a better method. In Nigeria and most part of the African countries, the commonest method of depreciation being adopted is straight line (Adah & Doragawa, 2013) irrespective of the nature of the business, usage of the assets, passage of time and even change in technology.

Depreciation is one major determinant of an organization’s profit size and quality or returns performance. In considering accounting policy of a business, depreciation is a factor that will have to be properly looked into and addressed in order to avoid under or over value part of the assets that is used in a period of reporting. Appropriate reporting of depreciation value becomes unavoidable so as to obtain the value of asset that is consumed in producing or assisting in producing income in an accounting period. Inappropriate determination of depreciation method is likely to adversely affect the financial reporting quality because it will lack reliability, relevance, understandability and comparability of operational results. Once the financial information lacks these four qualities (ICAN, 2009), there will seem to be an ambiguity in the financial information and this can prevent the shareholders, potential investors, creditors or lenders and other users from taking effective decisions.
3. Data Collection and Analysis

The study required primary data which were collected through designed questionnaire in order to address the independent variable along with the dependent variable to achieve the objective of the study. The enclosed type of questionnaire used was distributed to the expected respondents. The respondents included: preparers of financial statements (staff of final accounts), accounting and financial policy makers, any officer occupying the position of an accountant, accounting officer, auditor, financial analysts, scholars and few users of financial statements. These groups of respondents were senior officers in the various companies. The questionnaires were distributed at random among these expected respondents. The selected service companies were four deposit money banks, four insurance companies, four health care and four other financial institutions all in Nigeria. Secondary source of data were equally used to assist in the collection of relevant literature to provide insight into the research topic. Secondary data were also collected mainly from few available and related journal publications and text books in order to provide insights into this work and assist in gathering data for the questionnaire.

Two hundred (200) questionnaires were distributed using a three-point Likert type scale to give the respondent enclosed choice to express his objective opinion. The measurement is from 3 agree to 1 disagree. To measure the scale, six items were used in the questionnaire, five acting as indicators to predict one in the capacity of dependent variable. One hundred and fifty two (152) numbers of the completed questionnaires, representing about 76 percent were retrieved. However, 87 percent of the retrieved questionnaires were from the accountants and auditors of these companies as others including the accounting policy makers paid less attention to the questionnaire.

The one hundred and fifty two (152) retrieved questionnaires were analysed using logistic regression because of the prediction of result that is limited to either agree or disagree and the objective of the study. The sample of questionnaire is presented below for reference:

Table 1. Sample questionnaire

<table>
<thead>
<tr>
<th>Ref</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLM1</td>
<td>I have the knowledge and know the implications of SLM on financial information/reporting</td>
</tr>
<tr>
<td>SLM2</td>
<td>The company is using SLM and the result has been satisfactory in reference to financial statements</td>
</tr>
<tr>
<td>SLM3</td>
<td>Our company regularly reviews this method to adjust for any over or under depreciation that may occur</td>
</tr>
<tr>
<td>SLM4</td>
<td>Method of depreciation and its value are not significant to the overall overhead costs to change any financial information quality</td>
</tr>
<tr>
<td>SLM5</td>
<td>In my mind, all expected users of financial statements can read and understand these documents to power their decisions</td>
</tr>
<tr>
<td>SLM6</td>
<td>This straight line technique has no significant relationship with the financial information quality of our company</td>
</tr>
</tbody>
</table>

Key words: A = Disagree, U = Undecided, D = Disagree, SLM = Straight Line Method and SLM1 to SLM6 = Questions 1 to 6 in the questionnaire.

4. Results and Discussion

To test the internal consistency (reliability) of the questionnaires, its Cronbach’s Alpha coefficient was very weak as it is far below 0.70 considered as the benchmark for achieving reliability. The unsatisfactory result was due to few items in the questionnaire. Alternatively, the mean inter-item correlation test was carried out and the result was within the range of .2 and .4 as recommended by Briggs and Check (1986). The table 1 below also confirms the ability of the model to predict up to 72.4 percent, which is very satisfactory.

Table 2. Model Prediction

<table>
<thead>
<tr>
<th>Step</th>
<th>Observed</th>
<th>Predicted</th>
<th>Percentage Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SLM6_Bin</td>
<td>SLM does not influence financial information quality</td>
<td>SLM influences financial information quality</td>
</tr>
<tr>
<td>1</td>
<td>34</td>
<td>28</td>
<td>54.8</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>76</td>
<td>84.4</td>
</tr>
<tr>
<td>Overall Percentage</td>
<td></td>
<td></td>
<td>72.4</td>
</tr>
</tbody>
</table>

a. The cut value is .500
The table 1 above shows that the model has 72.4% prediction power. The model prediction result appears to be a reflection of the predicted analysis result. For instance, the first roll and column which states that straight line method does not influence financial information quality has up to 54.8 percent chance to determine the outcome of data analysis. However, the overall result is 72.4 percent, an indication that the model is good enough and capable of generating reliable result.

<table>
<thead>
<tr>
<th>Step 1&lt;sup&gt;a&lt;/sup&gt;</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLM1</td>
<td>-1.69</td>
<td>0.489</td>
<td>11.978</td>
<td>1</td>
<td>0.001</td>
<td>0.18</td>
</tr>
<tr>
<td>SLM2</td>
<td>-1.21</td>
<td>0.344</td>
<td>12.437</td>
<td>1</td>
<td>0.000</td>
<td>0.30</td>
</tr>
<tr>
<td>SLM3</td>
<td>0.36</td>
<td>0.252</td>
<td>2.034</td>
<td>1</td>
<td>0.154</td>
<td>1.43</td>
</tr>
<tr>
<td>SLM4</td>
<td>-1.41</td>
<td>0.408</td>
<td>12.017</td>
<td>1</td>
<td>0.001</td>
<td>0.24</td>
</tr>
<tr>
<td>SLM5</td>
<td>1.08</td>
<td>0.428</td>
<td>6.385</td>
<td>1</td>
<td>0.012</td>
<td>2.95</td>
</tr>
<tr>
<td>Constant</td>
<td>8.74</td>
<td>2.710</td>
<td>10.398</td>
<td>1</td>
<td>0.001</td>
<td>0.01</td>
</tr>
</tbody>
</table>

<sup>a</sup> Variable(s) entered on step 1: SLM1, SLM2, SLM3, SLM4, SLM5

SLM stands for Straight Line Method (used as question/item in the questionnaire)

The binary logistic regression model is aimed at investigating how SLM influences financial information quality using 5 independent variables. The SLM3 is not statistically significant. The dependent variable is binary using probability and a threshold value of 0.5. The model is:

$$P_i = \frac{e^{\alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5}}{1 + e^{\alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5}}$$

The results of the model using SPSS version 16 is given below:

$$P_i = \frac{e^{8.74 - 1.69x_1 - 1.21x_2 - 1.41x_4 + 1.08x_5}}{1 + e^{8.74 - 1.69x_1 - 1.21x_2 - 1.41x_4 + 1.08x_5}}$$

The last column of table 3 above gives the odds-ratio for easy interpretation of the model parameter. For question 1, the odds-ratio is 0.18 meaning that it is only 0.18 times that straight line method knowledge influences financial information quality than when there is no knowledge. For question 5, the odds-ratio is 2.95 meaning that it is 3 times that the understanding of financial statement influences financial information quality compared to when no financial statement is understood. In the same vein are questions 2 and 4, with odds-ratios of 0.30 and 0.24 respectively. Question 2 indicates 0.30 times that the use of straight line method in the company can influence financial information quality while question 4 shows 0.24 times, meaning that it is the method of depreciation and its value can influence financial information quality.

Question 1 with an item on knowledge and implication of straight line method of depreciation on financial information reporting has a statistically significant result at 5 percent level. This result is in agreement with the study of Hirani (1995) which emphasizes that method of depreciation should be carefully selected by a company because the charge will have a significant effect on financial position. That is, knowledge and implication of depreciation method should guide in the determination of method because of its effect on financial statements of a company. Though Hirani (1995)’s study did not state the method of depreciation, it is a generalized study on depreciation.

The second proxy of the independent variable which shows statistically significant result is the question on whether ‘the company is using straight line method and the result has been satisfactory in reference to financial statements’. This significant result confirms the findings of Adah & Dogarawa (2013) and Keiso, Waygandt & Warfield (2008). The two studies are specifically on straight line method of depreciation rather than on the general depreciation. However, the result is in conflict with the findings of Ahmed (2011) and ICAB (2008)’s studies. Question 3 result is not statistically significant because the service companies using the straight line method of depreciation hardly review it for any necessary adjustment that may arise to improve the quality of financial statements. Result of question 4 is also significant; it is on the total overhead costs. This is also relevant to the study of Hirani (1995). Result of question 5 also reveals a statistically significant result; at least more than average users of financial statements can read and understand the documents to enable them to make reasonable investment decision.

5. Conclusion

From the statistical results using logistic regression above, four items in the questionnaire, that is questions 1, 2, 4 and 5 reveal significant level results, meaning that straight line method of depreciation can significantly affect the financial information quality of service companies. However, question 3’s result is not statistically significant indicating that
these companies hardly review this method to adjust for any variation that may occur. From these findings, it can be concluded that straight line method of depreciation influences the financial information quality of service companies in Nigeria.

The study recommends that despite the general use of straight line method of depreciation, other methods of depreciation should be encouraged for adoption in order to provide an opportunity for comparing depreciation results. The objective is to improve knowledge of depreciation methodology for better option.

Reference


