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# The Use of Activity Based Costing and Balance Score Card for Strategic Performance Measurement: Perception of Chartered Accountants in Anambra State, Nigeria

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## Abstract

The main objective of this study is to determine how the use of Activity Based Costing (ABC) and the Balanced Scorecard (BSC) provide managers with information for performance measurement. This is predicated on the increasing inadequacy of the traditional accounting system to provide the needed change in business environment, sparked by global competition and technological innovation. From these emanated four specific objectives, four research questions and four hypotheses. The study adopted the descriptive survey research design. The population of the study comprised chartered accountants in Anambra state, Taro Yamane formula was used to determine the sample size. The formulated hypotheses were tested using multiple regression technique. The findings revealed that the use of activity based costing with the financial perspective of the balanced scorecard is capable of providing managers with information for financial performance measurement; the use of activity-based costing with the customer perspective of the balanced scorecard is capable of providing managers with information for customer performance measurement; with the internal business process perspective of the balanced scorecard can provide managers with information for internal business monitoring; the learning and growth perspective of the balanced scorecard can provide managers with information for learning and growth monitoring. Based on this the study recommends that these two techniques be used simultaneously in order to provide managers with the requisite information for performance measurement. The practical implication of this is the improved relevance placed on synergy from the usage of the two techniques.

## Keywords

Activity Based Costing, Balance Score Card, Strategic, Performance, Measurement

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## 1. Introduction

Companies now operate in an intense competitive environment (El-Gibaly & Diab, 2012) that has rendered many traditional performance measurement systems obsolete (Shinder & McDowell, 1999). The situation is also same in the financial markets, as increasing demands for superior shareholder returns means that top managers must formulate

business strategies, aimed at achieving competitive advantage (Kaličanin & Knežević, 2013; Shinder & McDowell, 1999). Created competitive advantage in the commercial market is realized in the financial market in the form of a superior return for capital providers (Kaličanin & Knežević, 2013). Talebnia (2012) observed that for organisations to achieve success in a competitive

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environment, they must pursue and execute strategies consistent with their mission.

The need for organisations to adapt to the dynamics of the operating environment (Shinder & McDowell, 1999).

Traditional accounting systems developed to suit a typical factory environment which then existed, with high labour cost, little product variety, low overhead cost with total absence automation, coupled with tracing of direct labour activities and indirect cost allocated across product unit (Adeniyi, 2004). These practices many have provided misleading performance measurement for business which no longer involved in mass production of a single product or offering undistinguished service. Confronted with performance measuring problems caused by traditional accounting practices, businesses need to match their accounting practice to changing business practices. As business becomes leaner, its accounting practices should change to be more efficient. (Jay Away, 2015).

This has led to a re-examination of various traditional performance measures. There is no doubt that accurate and holistic information is required by organizations in different business stages to conduct various functions effectively and to enable it take right decisions instead of basing decisions upon misleading or inaccurate information. According to Abushaiba and Zainuddin (2012) the information needs of modern organisations has served as a major impetus in designing modern day performance measurement system. This modern day performance measurement techniques are now based on economic theory rather than on accounting framework(s) (Shinder & McDowell, 1999). They include strategic tools such as: Activity Based Costing, the Balanced Scorecard and EVA for performance measurement and management. The need to measure the performance of an organisation remains validly imperative at least for one reason: 'stakeholders need to know whether or not the organisation is fulfilling its purpose' (Etim & Agara, 2011).

One critical question for modern day corporations is 'what are the challenges of measuring business excellence in the twenty- first century and which meaning, contents and modalities the measurement of business excellence has to have in the emergent new complex competitive scenario?' (Domanovic, 2012). In view of this, present day performance measurement systems are not just focused o managing tangible assets, but also their intangible counterparts (Kaplan & Norton, 2001, as cited in Abushaiba & Zainuddin, 2012). Thus, an obvious limitation of the traditional performance measures was its neglect of these intangible aspects of business operations, and where therefore deemed inadequate, for guiding and evaluating the journey that information age companies must make to create future value (Kaplan &

Norton, 1992).

Present day performance measurement tools are therefore designed to tackle the limitations of traditional performance measures. One such widely applied technique, the ABC (Activity Based Costing), is designed to solve the problem of overhead cost allocation by giving more accurate information on costs for the purpose of managing a company (Kaličanin & Knežević, 2013). Another, the balanced scorecard was designed as a measuring device and adds non-financial metrics to traditional financial metrics to in order to give a well-rounded view of the performance of an organization (Talebna, 2012). (Talebna, 2012). Most studies however focus on the application or usage of either of these two techniques with its inherent limitations.

Prompted by this, the researchers formulated the following hypotheses to navigate this study:

Ho<sub>1</sub>: The use of activity-based costing with the financial perspective of the balanced scorecard cannot provide managers with information for financial performance measurement.

Ho<sub>2</sub>: The use of activity-based costing with the customer perspective of the balanced scorecard cannot provide managers with information for customer performance assessment.

Ho<sub>3</sub>: The use of activity-based costing with the learning and growth perspective of the balanced scorecard cannot provide managers with information for learning and growth monitoring.

Ho<sub>4</sub>: The use of activity-based costing with the internal business process perspective of the balanced scorecard cannot provide managers with information for internal business monitoring.

The remainder of the paper is organized as follows: Section one introduces the concepts and the formulated hypotheses under investigation. Section two presents the theoretical framework on which the study is based and empirical reviews. Section three outlines the research design and methodology. Section four presents the analysis and interpretation; while section five details the study findings, conclusion and recommendations.

## 2. Review of Related Literature

### 2.1. Theoretical Framework

The theoretical premise upon which this study is based is the contingency theory of management accounting. Contingency theory emerged in the management literature in the late 1960s and the 1970s, as an alternative to the view of classical

management theorists that there was a single ‘best way’ for managers to achieve efficient organizational operations (Gerhardy, 2002). The contingency theory as applied to management accounting took its root from the contingency theory of organizations and is based on the premise that, “there is no universally appropriate accounting system, applying equally to all organizations in all circumstances, implying that as the specific circumstances of an organization alters, so should MAS adapt if they are to remain effective” (Emmanuel, Otley & Merchant, 1990, as cited in Ajibolade, 2013).

In its simplest form contingency theory contends that what constitutes effective management is situational, depending upon the unique characteristics of each circumstance (Gerhardy, 2002). Rayburn and Rayburn (1991, p. 57) provide the following useful and succinct summary of contingency theory as it is applied in management accounting research: ‘Contingency theory is based on the premise that there is no universally appropriate accounting system which applies equally to all organisations in all circumstances; instead, the optimal management control system depends on the specific elements of an organisation’s environment. Effective control systems are usually situation specific and tailored to the management of each organisation. The exercise of managerial choice and the interdependence of accounting systems and the environment are acknowledged’.

Consequently, accounting systems are contingent upon circumstances that prevail at any time; they must be capable of development in order to take into consideration such factors as changes in the environment, competition, organizational structures, and technology (A Dictionary of Accounting, 4<sup>th</sup> Ed.). The Situational factors or contingent factors vary from organization to organization and it is impossible to describe and spell out the character of management accounting in the prevalence of each such factor.

## 2.2. Performance Measurement in Modern Enterprise

According to De Toni and Tonchia (2001) there is a reconsideration of traditional Performance Measurement Systems (PMSs), directed at the control of production costs and productivity. Muhammad (2010, as cited in Etim and Agara, 2011) observed that during the industrial revolution, performance measurement revolved around the use of purely accounting or financial data to gauge performance. However, the emergence of the information age has seen the use of only financial data as a basis for gauging performance to be inadequate in measuring corporate performance (Muhammad, 2010, as in Etim & Agara, 2011).

Neely, Mills, Gregory and Platts (1995) defined performance

measurement system as “the set of metrics used to quantify both the efficiency and effectiveness of actions”. According to Neely, Marr, Roos, Pike and Gupta (2003) research in the area of performance measurement has mainly focused on first generation frameworks, with little attention paid to second generation frameworks, however, to really overcome the measurement crisis organisations need to address the challenges of the third generation approaches, namely:

1. Models must reflect the static and dynamic realities of organisations but at the same time not lose appropriateness as a managerial tool.
2. We must move from data to information and must provide rigorous information especially for the intangible value drivers in organisations.
3. The models must be practical and aligned with other organisational processes in order to allow actions to be taken.
4. And most fundamentally of all, we must seek increasingly robust ways of demonstrating the cash flow implications of the non-financial and intangible organisational value drivers.

## 2.3. Operating Costs of Modern Enterprise

Kaličanin and Knežević (2013) observed that modern day enterprises are extremely complex, and characterized by expensive and sophisticated technology, the use technological methods in operations, flexibility of production processes and products, and frequent changes of organizational structure.

This according to Maher, Lanen & Rajan (2006) results in a significant rise in overhead or indirect costs, in comparison to direct costs. Direct costs of labour, which had a very important role in traditional companies, today represent a relatively small, diminishing, and often insignificant part of the total production costs in modern enterprises. While the direct costs of labour are decreasing (due to production automation), the overhead costs of labour (and other staff costs) are increasing. In addition to this, direct costs of materials are decreasing, as a result of developing new materials that are far less costly than traditional ones (Kaličanin & Knežević, 2013).

Production automation has increased overhead costs in two ways: by a greater proportion of overhead costs in total costs caused by a fall in the direct costs of labour and materials, and by an increase in the installation and maintenance costs of automated equipment. A rise in overhead costs is, therefore, the consequence of a higher proportion of fixed costs at the expense of variable costs in total costs of the modern enterprise. The rise in fixed costs is also caused by

an ever increasing development of so-called support activities, i.e., activities outside direct production (research and development, design, production of trial series, pilot projects, etc.) (Kaličanin & Knežević, 2013, p. 98). Also companies are facing different and potentially very important risks in the international marketplace, which may be divided into two groups: risks that have harmful effects on company assets and direct investment and risks that adversely affect and threaten international trade (transfer risk, tariff risk, barriers to trade risk, tax risk, price risk, union risk) (Czinkota & Ronkainen, 2007). This all leads to a higher proportion of insurance and legal services costs, etc., in the total costs of a company.

#### 2.4. Traditional Accounting System

Conventional accounting system developed in the early part of the century to deal with product costing in a typical factory which then existed (Adeniji, 2004). Then, industry was labour intensive, there was no automation, product variety was small and overhead in manufacturing firms were generally very low compared to today. Standard was developed for tracing and controlling direct labour activities and indirect costs were allocated across products units.

In those years, there were narrow ranges of products incurred, mostly variable costs (Sheu and Kovar, 2001). Today business environment has witness changes. In order to stay competitive, manufacturing firms are constantly reviewing and revising their manufacturing strategies. These changes necessitated appropriate switch to new management accounting practices to take into account the changing production cost structure (Isa and Foong, 2005). Numerous debates have been held among scholars and practitioners in providing adequate, relevant, timely, and accurate information to management for planning, control and decision-making purposes in the new manufacturing environment (Bjornenak and Olson, 1999, Cooper and Kaplan, 1988, Drury and Tayles, 1995; Johnson and Kaplana, 1987; Kaplan, 1984 as cited in Isa and Foong, 2005). It is for these reasons that Kaplan (1996) stated: Traditional accounting practices...simply the wrong measures. They move the company in the wrong direction, reward managers for damaging business and provide incentive for improvement. The best we can do is to switch them off, just stop doing them. In related criticism, Goldralt (1983) as cited by Sheu and Kovar (2003) describe traditional cost accounting in this way: Cost accounting was a powerful solution; did not change the behavior and performance of industrial companies. Then technology pulled the rug from underneath cost accounting. Continuing, Hardly and Hubbard, (1992) as cited by Rivero and Emblemsvag (2007) observed the traditional accounting system cannot trace-

overhead costs but simply distribute as butter on bread as it were without estimating the effect of all the complexities and identify the root cause of costs (Eiler and Ball, 1997). The assumptions on which cost accounting were based are no longer valid. Many companies are already facing the disaster from following an obstructed solution. They are too late, too aggregated and too distorted. However, empirical studies have shown that the traditional accounting system are still widely use across firms possible due to lack of the knowledge of other powerful and modern management accounting system like activity based cost system.

#### 2.5. Activity Based Costing

Activity Based Costing (ABC) is an accounting method that allows businesses to gather data about their operating costs. Costs are assigned to specific activities—such as planning, engineering, or manufacturing—and then the activities are associated with different products or services. In this way, the ABC method enables a business to decide which products, services, and resources are increasing their profitability, and which are contributing to losses. Managers are then able to generate data to create a better budget and gain a greater overall understanding of the expenses that are required to keep the company running smoothly. Generally, activity-based costing is most effective when used over a long period of time, as opposed to shorter-term solutions such as the theory of constraints (TOC). (*Gale's Encyclopaedia of Small Business*).

In the first step of the ABC approach (activities consume resources or cost elements) costs are assigned to adequate activity centres (a group of activities with the same cost drivers) with a view to determining the total activity costs (Kaličanin and Knežević, 2013). In the next step product costs, service costs, or costs of some other cost object are determined on the basis of relevant cost drivers (Kaličanin and Knežević, 2013, p. 102). This costing method assigns the cost of each activity in an organization to all products and services according to the actual consumption of the activity resource by the product or service. This is a marked departure from the practice of sharing overheads costs equally or overheads becoming part of the overall profit-loss estimate instead of component product pricing (Nayab, 2011). Activity-based costing (ABC) provides an information basis for monitoring and controlling one of two possible sources of competitive advantage, low-cost production and low-cost distribution (Kaličanin and Knežević, 2013). Accuracy of cost information is conditioned by finding an adequate relation between overhead costs and cost objects, identifying and tracing cost drivers and output measures of activities, and by monitoring cost behavior of different levels of a product (Kaličanin and Knežević, 2013).

The major advantage of activity based costing is the ability to estimate the cost of individual products and services precisely. By transferring overhead costs to individual units of products or services, ABC helps identify inefficient or non-profitable products or activities that eat into the profitability of efficient processes or highly profitable products (Nayab, 2011).

### 2.6. The Balanced Scorecard

During the industrial revolution of 1850-1975, performance measurement revolved around the use of purely accounting or financial data to gauge the performance of firms (Muhammad, 2010, cited in Etim & Agara, 2011). In 1990, the Nolan Norton Institute –the KPMG’s research unit – sponsored a study on performance evaluation in the organizations of the future, which was driven by the perception that the use of exclusively financial measures was obsolete (Kaplan & Norton, 1996b). Kaplan (1994) defends that an excessive emphasis on assessment measures based on short term financial results may drive the enterprises to invest in quick solutions to the detriment of long term value creation. It can, namely, lead managers to try to maximize short term financial results harming future clients.

The conclusions of the Nolan Norton Institute’s study lead to the creation of a new model that became known as Balanced Scorecard (BSC). With the emergence of the information age, in the last decades of the twentieth century, the use of only financial data as the basis for measuring performance has been observed to be inadequate to manage corporate performance of organisations in the face of global economic integration, which is characterised by integrated supply and demand chains (Muhammad, 2010, cited in Etim & Agara, 2011). This method was presented for the first time in 1992 in the Harvard Business Review (Kaplan and Norton, 1992), having however suffered subsequent revisions. In the evolution of the BSC concept two fundamental moments were identified: firstly, the BSC was presented as a performance evaluation system (Kaplan and Norton, 1992, 1993; Kaplan, 1994); secondly, the BSC was defended as a strategic management system (Kaplan and Norton, 1996a, 1996b, 1996c, 1996d).

## 3. Research Design & Methodology

The survey method of descriptive research design was employed by the researchers. this the researchers believed will unravel the critical elements or characteristics under investigation.

### 3.1. Population of the Study

The population of the study is made up of the following groups of accountants: chartered accountants (i.e. members of the Institute of Chartered Accountants of Nigeria) and Association of National Accountants of Nigeria domiciled (practicing) in Anambra state. Consultations from the district societies gave figures of fifty-three (53) (active members) for ICAN and one hundred and twenty seven (127) ANAN members Anambra.

### 3.2. Sample and Sampling Technique

In determining the sample size of the study, Taro-Yamene (1964) formula for finite population was applied.

$$N = 2001 + 200 \times (.05)^2 = 133$$

Table 3.1. Schedule of Questionnaire Administered

| Respondents | No. of questionnaire administered | No. of questionnaire not retrievable |
|-------------|-----------------------------------|--------------------------------------|
| Awka        | 23 (ICAN)                         | Nil                                  |
|             | 69 (ANAN)                         |                                      |
| Onitsha     | 26 (ICAN)                         | Nil                                  |
|             | 15 (ANAN)                         |                                      |
| Total       | 133                               |                                      |

Source: Field Survey (2014)

## 4. Presentation, Analysis and Interpretation of Data

### 4.1. Descriptive Statistics of Primary Data

The tables below present the frequency distribution of the various questions in the questionnaire.

Table 4.1. Question 1

| Activity Based Costing can provide activity information for the Financial perspective of the Balanced Scorecard |             |           |         |               |                    |
|---|-------------|-----------|---------|---------------|--------------------|
|   |             | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid   | Indifferent | 22        | 16.5    | 16.5          | 16.5               |
|   | Agree       | 111       | 83.5    | 83.5          | 100.0              |
|   | Total       | 133       | 100.0   | 100.0         |                    |

Source: Field Survey (2014)

Table 4.2. Question 2

| The application of Activity-based cost drivers would enable the translation of goals and measures of the Financial perspective |                |           |         |               |                    |
|--|----------------|-----------|---------|---------------|--------------------|
|  |                | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid  | Indifferent    | 34        | 25.6    | 25.6          | 25.6               |
|  | Agree          | 93        | 69.9    | 69.9          | 95.5               |
|  | Strongly Agree | 6         | 4.5     | 4.5           | 100.0              |
|  | Total          | 133       | 100.0   | 100.0         |                    |

Source: Field Survey (2014)

Table 4.3. Question 3

| Activity Based Costing can provide activity information for the Customer perspective of the Balanced Scorecard |                |           |         |               |                    |
|--|----------------|-----------|---------|---------------|--------------------|
|  |                | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid  | Indifferent    | 42        | 31.6    | 31.6          | 31.6               |
|  | Agree          | 88        | 66.2    | 66.2          | 97.7               |
|  | Strongly Agree | 3         | 2.3     | 2.3           | 100.0              |
|  | Total          | 133       | 100.0   | 100.0         |                    |

Source: Field Survey (2014)

Table 4.4. Question 4

| The application of Activity-based cost drivers would enable the translation of goals and measures of the Customer perspective |             |           |         |               |                    |
|---|-------------|-----------|---------|---------------|--------------------|
|   |             | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid   | Indifferent | 59        | 44.4    | 44.4          | 44.4               |
|   | Agree       | 74        | 55.6    | 55.6          | 100.0              |
|   | Total       | 133       | 100.0   | 100.0         |                    |

Source: Field Survey (2014)

Table 4.5. Question 5

| Activity Based Costing can provide activity information for the Internal Business Process perspective of the Balanced Scorecard |             |           |         |               |                    |
|---|-------------|-----------|---------|---------------|--------------------|
|   |             | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid   | Indifferent | 43        | 32.3    | 32.3          | 32.3               |
|   | Agree       | 90        | 67.7    | 67.7          | 100.0              |
|   | Total       | 133       | 100.0   | 100.0         |                    |

Source: Field Survey (2014)

Table 4.6. Question 6

| The application of Activity-based cost drivers would enable the translation of goals and measures of the Internal Business Process perspective |                |           |         |               |                    |
|--|----------------|-----------|---------|---------------|--------------------|
|  |                | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid  | Indifferent    | 24        | 18.0    | 18.0          | 18.0               |
|  | Agree          | 65        | 48.9    | 48.9          | 66.9               |
|  | Strongly Agree | 44        | 33.1    | 33.1          | 100.0              |
|  | Total          | 133       | 100.0   | 100.0         |                    |

Source: Field Survey (2014)

Table 4.7. Question 7

| Activity Based Costing can provide activity information for the Learning and Growth perspective of the Balanced Scorecard |                |           |         |               |                    |
|---|----------------|-----------|---------|---------------|--------------------|
|   |                | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid   | Indifferent    | 37        | 27.8    | 27.8          | 27.8               |
|   | Agree          | 82        | 61.7    | 61.7          | 89.5               |
|   | Strongly Agree | 14        | 10.5    | 10.5          | 100.0              |
|   | Total          | 133       | 100.0   | 100.0         |                    |

Source: Field Survey (2014)

**Table 4.8.** Question 8

| <b>The application of Activity-based cost drivers would enable the translation of goals and measures of the Learning and Growth perspective</b> |                   |                  |                |                      |                           |
|---|-------------------|------------------|----------------|----------------------|---------------------------|
|   |                   | <b>Frequency</b> | <b>Percent</b> | <b>Valid Percent</b> | <b>Cumulative Percent</b> |
| Valid   | Strongly Disagree | 7                | 5.3            | 5.3                  | 5.3                       |
|   | Disagree          | 2                | 1.5            | 1.5                  | 6.8                       |
|   | Indifferent       | 23               | 17.3           | 17.3                 | 24.1                      |
|   | Agree             | 87               | 65.4           | 65.4                 | 89.5                      |
|   | Strongly Agree    | 14               | 10.5           | 10.5                 | 100.0                     |
|   | Total             | 133              | 100.0          | 100.0                |                           |

Source: Field Survey (2014)

**Table 4.9.** Usage level of ABC & BSC

| <b>S/No</b> | <b>Measurement Tool</b>                                   | <b>Usage level</b> | <b>%</b> |
|-------------|---|--------------------|----------|
| 1           | Activity Based Costing (ABC)                              | 53                 | 40       |
| 2           | Balanced Scorecard (BSC)                                  | 47                 | 35       |
| 3           | Activity Based Costing (ABC) and Balanced Scorecard (BSC) | 33                 | 25       |

Source: Field Survey (2014)

From the table above, 40 percent of respondents agreed to the use of Activity Based Costing as a strategic measurement tool; while 35 percent of respondents agreed to the use of Balanced Scorecard. However, usage of the two tools had

only 33 respondents agreeing to that, approximately representing 25 percent.

**Table 4.10.** Descriptive Statistics

|  | <b>N</b> | <b>Minimum</b> | <b>Maximum</b> | <b>Mean</b> | <b>Std. Deviation</b> |
|--|----------|----------------|----------------|-------------|-----------------------|
| Activity Based Costing can provide activity information for the Financial perspective of the Balanced Scorecard                                | 133      | 3.00           | 4.00           | 3.8346      | .37296                |
| The application of Activity-based cost drivers would enable the translation of goals and measures of the Financial perspective                 | 133      | 3.00           | 5.00           | 3.7895      | .50830                |
| Activity Based Costing can provide activity information for the Customer perspective of the Balanced Scorecard                                 | 133      | 3.00           | 5.00           | 3.7068      | .50425                |
| The application of Activity-based cost drivers would enable the translation of goals and measures of the Customer perspective                  | 133      | 3.00           | 4.00           | 3.5564      | .49869                |
| Activity Based Costing can provide activity information for the Internal Business Process perspective of the Balanced Scorecard                | 133      | 3.00           | 4.00           | 3.6767      | .46951                |
| The application of Activity-based cost drivers would enable the translation of goals and measures of the Internal Business Process perspective | 133      | 3.00           | 5.00           | 4.1504      | .70169                |
| Activity Based Costing can provide activity information for the Learning and Growth perspective of the Balanced Scorecard                      | 133      | 3.00           | 5.00           | 3.8271      | .59685                |
| The application of Activity-based cost drivers would enable the translation of goals and measures of the Learning and Growth perspective       | 133      | 1.00           | 5.00           | 3.7444      | .86737                |
| Valid N (listwise)   | 133      |                |                |             |                       |

Source: Field Survey (2014)

Table 4.10 contains information on the descriptive statistics: mean and standard deviation of the responses. As can be seen from the analysis, the mean responses are all three and above while the standard deviations are less than one. This is an indication of the respondents agreement with respect to the various dimensions and questions raised to address the objectives of this research. Again it is seen from the minimum and maximum responses that all the questions except the last has a minimum response of one and maximum of five while the other questions have minimum responses of three and maximum of five. This is also an indication of agreement by the respondents to the questions raised in the

questionnaire. This implies that the respondents agree to the proposition that the Use of Activity Based Costing and Balance Score Card facilitate Strategic Performance Measurement.

## 4.2. Test of Hypotheses

*Hypothesis One:*

$H_0$ : The use of activity-based costing with the financial perspective of the balanced scorecard cannot provide managers with information for financial performance measurement.

| Model Summary |                   |          |                   |                            |
|---------------|-------------------|----------|-------------------|----------------------------|
| Model         | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1             | .494 <sup>a</sup> | .244     | .239              | .32545                     |

a. Predictors: (Constant), The application of Activity-based cost drivers would enable the translation of goals and measures of the Financial perspective

Source: SPSS Ver. 22

| ANOVA <sup>a</sup> |            |                |     |             |        |                   |
|--------------------|------------|----------------|-----|-------------|--------|-------------------|
| Model              |            | Sum of Squares | df  | Mean Square | F      | Sig.              |
| 1                  | Regression | 4.485          | 1   | 4.485       | 42.348 | .000 <sup>b</sup> |
|                    | Residual   | 13.875         | 131 | .106        |        |                   |
|                    | Total      | 18.361         | 132 |             |        |                   |

a. Dependent Variable: Activity Based Costing can provide activity information for the Financial perspective of the Balanced Scorecard  
 b. Predictors: (Constant), The application of Activity-based cost drivers would enable the translation of goals and measures of the Financial perspective

Source: SPSS Ver. 22

The above regression analysis show that coefficient of correlation R is .494 while the coefficient of determination R<sup>2</sup> is .244 which means that 24.4% of variation in the dependent variable are accounted for by the independent variable. The adjusted R<sup>2</sup> is .239. Both explain variations in the dependent variable that are accounted for by the independent. The next information is the ANOVA which show a value of 42.348 and is highly statistically significant at .000. This shows that the coefficient of correlation is significantly different from zero and based on this the null hypothesis is rejected while the alternate is accepted and the

conclusion is that the use of activity-based costing with the financial perspective of the balanced scorecard can provide managers with information for financial performance measurement.

*Hypothesis Two:*

H<sub>0</sub>: The use of activity-based costing with the customer perspective of the balanced scorecard cannot provide managers with information for customer performance assessment.

| Model Summary |                   |          |                   |                            |
|---------------|-------------------|----------|-------------------|----------------------------|
| Model         | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1             | .413 <sup>a</sup> | .170     | .164              | .46106                     |

a. Predictors: (Constant), The application of Activity-based cost drivers would enable the translation of goals and measures of the Customer perspective

Source: SPSS Ver. 22

| ANOVA <sup>a</sup> |            |                |     |             |        |                   |
|--------------------|------------|----------------|-----|-------------|--------|-------------------|
| Model              |            | Sum of Squares | df  | Mean Square | F      | Sig.              |
| 1                  | Regression | 5.717          | 1   | 5.717       | 26.894 | .000 <sup>b</sup> |
|                    | Residual   | 27.847         | 131 | 0.213       |        |                   |
|                    | Total      | 33.564         | 132 |             |        |                   |

a. Dependent Variable: Activity Based Costing can provide activity information for the Customer perspective of the Balanced Scorecard  
 a. Dependent Variable: Activity Based Costing can provide activity information for the Customer perspective of the Balanced Scorecard

Source: SPSS Ver. 22

For the second hypothesis, the regression result show correlation coefficient of .413 while the coefficient of determination is .170 which means that only 17% of the variations in the dependent variables are accounted for by the independent variable. The adjusted coefficient of determination also explain variations in the dependent variable accounted for by the independent variable. The ANOVA value is 26.894 and is significant at .000. This means the correlation value is significantly different from zero hence we reject the null hypothesis and accept the

alternate and conclude that The use of activity-based costing with the customer perspective of the balanced scorecard can provide managers with information for customer performance assessment.

*Hypothesis Three:*

H<sub>0</sub>: The use of activity-based costing with the internal business process perspective of the balanced scorecard cannot provide managers with information for internal business monitoring.



| Model Summary   |                   |          |                   |                            |
|---|-------------------|----------|-------------------|----------------------------|
| Model   | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1   | .150 <sup>a</sup> | .023     | .015              | .46595                     |
| a. Predictors: (Constant), The application of Activity-based cost drivers would enable the translation of goals and measures of the Internal Business Process perspective |                   |          |                   |                            |

Source: SPSS Ver. 22

| ANOVA <sup>a</sup>  |            |                |     |             |       |       |
|---|------------|----------------|-----|-------------|-------|-------|
| Model   |            | Sum of Squares | df  | Mean Square | F     | Sig.  |
| 1   | Regression | 0.657          | 1   | 0.657       | 3.026 | .084b |
|   | Residual   | 28.441         | 131 | 0.217       |       |       |
|   | Total      | 29.098         | 132 |             |       |       |
| a. Dependent Variable: Activity Based Costing can provide activity information for the Internal Business Process perspective of the Balanced Scorecard                    |            |                |     |             |       |       |
| b. Predictors: (Constant), The application of Activity-based cost drivers would enable the translation of goals and measures of the Internal Business Process perspective |            |                |     |             |       |       |

Source: SPSS Ver. 22

The above regression analysis which relate to hypothesis three show that coefficient of correlation R is .150 while the coefficient of determination  $R^2$  is .023 which means that only 2.3% of variation in the dependent variable are accounted for by the independent variable. The adjusted  $R^2$  is .015. Both explain variations in the dependent variable that are accounted for by the independent. The next information is the ANOVA which show a value of 3.026 and has a significant level of .084. This shows that the coefficient of correlation is not significantly different from zero and based

on this the null hypothesis is accepted while the alternate is rejected and the conclusion is that the use of activity-based costing with the internal business process perspective of the balanced scorecard cannot provide managers with information for internal business monitoring.

*Hypothesis Four:*

$H_0$ : The use of activity-based costing with the learning and growth perspective of the balanced scorecard cannot provide managers with information for learning and growth monitoring.

| Model Summary   |                   |          |                   |                            |
|---|-------------------|----------|-------------------|----------------------------|
| Model   | R                 | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1   | .221 <sup>a</sup> | .049     | .042              | .58427                     |
| a. Predictors: (Constant), The application of Activity-based cost drivers would enable the translation of goals and measures of the Learning and Growth perspective |                   |          |                   |                            |

Source: SPSS Ver. 22

| ANOVA <sup>a</sup>  |            |                |     |             |       |                   |
|---|------------|----------------|-----|-------------|-------|-------------------|
| Model   |            | Sum of Squares | df  | Mean Square | F     | Sig.              |
| 1   | Regression | 2.302          | 1   | 2.302       | 6.744 | .010 <sup>b</sup> |
|   | Residual   | 44.72          | 131 | 0.341       |       |                   |
|   | Total      | 47.023         | 132 |             |       |                   |
| a. Dependent Variable: Activity Based Costing can provide activity information for the Learning and Growth perspective of the Balanced Scorecard                    |            |                |     |             |       |                   |
| b. Predictors: (Constant), The application of Activity-based cost drivers would enable the translation of goals and measures of the Learning and Growth perspective |            |                |     |             |       |                   |

Source: SPSS Ver. 22

The last regression analysis which relate to hypothesis four show that coefficient of correlation R is .221 while the coefficient of determination  $R^2$  is .049 which means that only 4.9% of variations in the dependent variable are accounted for by the independent variable. The adjusted  $R^2$  is .042. Both explain variations in the dependent variable that are accounted for by the independent. The next information is the ANOVA which show a value of 6.744 and is significant .010. This shows that though the coefficient of correlation low, it is significantly different from zero and based on this the null hypothesis is rejected while the alternate is accepted and the conclusion is that The use of

activity-based costing with the learning and growth perspective of the balanced scorecard can provide managers with information for learning and growth monitoring.

Various studies have examined the possibility of activity based costing and balanced scorecard in performance measurement. Example, Turner (2005) observed that linking ABC – BSC would help keep spot light on result. Relatedly, the study by El-Gibaly and Diab who used structural equation model attempted to develop a framework for ABC and BSC integration. However, the awareness level of Chartered Accountants that are to implement these strategic performance measurement tools is yet to be examined despite

the fact that the early attempt was saddled with implementation challenges. (Etim and Agara, 2011). Further, the work by Kalicanin and Knezevic (2013) discussed extensively on the merits and sophistication of the integration of both tools. This study therefore seeks to ascertain the opinion of Chartered Accountants with a view to the adoption of these tools in performance measurement in developing country setting such as Nigeria which continually nurse idea to join the league of the top 20 economies of industrialised nations come 2020. By awareness creation and application of these strategic tools by Nigerian firms, these goal may be attained.

## 5. Summary of Findings, Conclusion and Recommendations

### 5.1. Summary of Findings

1. Respondents perceived that the use of activity-based costing with the financial perspective of the balanced scorecard is capable of providing managers with information for financial performance measurement.
2. Respondents perceived that the use of activity-based costing with the customer perspective of the balanced scorecard is capable of providing managers with information for customer performance measurement.
3. Respondents agreed that activity-based costing with the internal business process perspective of the balanced scorecard can provide managers with information for internal business monitoring.
4. Respondents agreed that activity-based costing with the learning and growth perspective of the balanced scorecard can provide managers with information for learning and growth monitoring.

#### *Other findings:*

1. The usage of Activity Based Costing was more pronounced than the Balanced Scorecard among respondents (as shown in table 4.9, 53 respondents representing 40% the sample agreed to the successful implementation of ABC in their organisation);
2. The Balanced Scorecard had a significantly lower value than the ABC (as shown in table 4.9, 47 respondents representing 35% of the sample agreed to the successful implementation of the BSC in their organisation);
3. Also significantly lower were those that agreed to the successful implementation of the two techniques, namely Activity Based Costing and the Balanced Scorecard (table 4.9, showed that 33 respondents representing 25% of the

sample agreed to the successful implementation of ABC and BSC in their organisation).

### 5.2. Justification for the Study

Nigeria's quest to join the league of the top 20 economies of the world by 2020 may be a mirage if she does not enthrone structures and systems that will usher in new accounting strategies that are forward looking that has rendered many traditional performance practices obsolete. Many studies in these areas are foreign oriented and few indigenous studies do not completely close the existing knowledge gap. This study therefore will contribute to the existing body of knowledge as it is set out to determine how Activity Based System (ABS) and Balance Score Card (BSC) will provide managers and accountants with the much needed strategic performance evaluation.

### 5.3. Conclusion

Performance measurement is critical to the survival of any organisation, as companies operate in highly turbulent environments. Increasingly performance is no longer defined in terms of its financial focus; therefore systems capable of capturing the non-financial dimensions of operations are being adopted. Activity Based Costing and the Balanced Scorecard were developed to help improve the decision-making functions in modern organisations by creating accurate, timely and reliable information on overhead cost, financial and non-financial performance indicators. Thus, in the words of Shinder and McDowell (1999) the use Activity Based Costing and the Balanced Scorecard is capable of providing managers with information needed for "value creating" decisions.

### 5.4. Recommendations

1. Corporations should use activity-based costing with the financial perspective of the balanced scorecard in order to provide information for financial performance measurement.
2. Corporations should use activity-based costing with the customer perspective of the balanced scorecard in order to provide information for customer performance measurement.
3. Corporations should use activity-based costing with the internal business process perspective of the balanced scorecard in order to provide information for internal business monitoring.
4. Corporations should use activity-based costing with the learning and growth perspective of the balanced scorecard in order to provide information for learning and growth monitoring.

5. The use of activity based costing would provide activity based information which if embedded into the four perspectives of the balanced scorecard would enable the development of innovative practices within the organisation, as managers develop core competencies in their managerial function which could also strengthen the decision-making process.

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