Review

Declining use of univariate analysis in managerial decisions (causes, resorts and effects on corporate governance)

Angus O. Unegbu[1]*, James J. Adefila[2] and Abdullah A. Malgwi[2]

[1]American University of Nigeria, Yola, Nigeria.
[2]Department of Accountancy, University of Maiduguri, Maiduguri, Nigeria.

This paper examines the diminishing use of univariate analysis in investment and other managerial decisions in Nigeria. It aims at determining the extent new generation managers use financial ratios for corporate decisions, reasons for declining use of ratios, understand the current resorts and effects of these diminishing use on corporate well-being over the last five years. Twenty corporate bodies were surveyed and two hundred questionnaires were administered to three segments of respondents comprising of "chief executives and senior managements, accounting/finance officers and outside corporate stakeholders". It was discovered that the use of financial ratios in many managerial and other investment decisions are significantly diminished in Nigeria, a country with huge international financial interests and impacts. We also found that there are no significant managerial resorts but there exists significant effect of diminishing use of univariate discriminant analysis on the corporate well-being for the last five years. We recommend that the research be carried out on a national scale to enable more accurate generalizations.

Key words: Discriminant analysis, financial ratios and managerial decisions.

INTRODUCTION

Univariate discriminant analyses are used to make rational decisions in keeping with a company's objectives and it is used by outside stakeholders to evaluate how well the company is doing against set yardstick. In accounting parlance which is concerned with the quanti-fication of economic events in money terms in order to collect, record, evaluate and communicate the results of past events and to aid in decision making uses a known univariate discriminant analysis called financial ratios. Accurately computed and interpreted financial ratios give the analyst an understanding of the financial condition and performance of the firm, which may not be readily apparent from the reported financial statements. Univariate discriminant analyses are often carried either by tracing the firm's trend performance over a given range of years or comparing the firm's performance against those of other firms in the same industry within same period. The firm's trend analysis will indicate whether there has been an improvement or deterioration of the firm's value over time.

The industrial analysis will give some insight into the relative financial condition of the firm compared with her siblings.

Despite the long history and relevance of univariate discriminant analysis in evaluating and diagnosing of Financial Statements, new generalization of Corporate Managers are diminishingly making use of it for relevant decisions. This research aims at reviewing existing studies of univariate discriminant analysis, causes of declining use of this important tool, the current resorts of corporate managers and effects on corporate reporting and analysis in Nigeria and by extension to the International Financial system since what affects Nigeria always have ripple effects on the International community.

---
*Corresponding author. E-mail: angusu1@gmail.com, unegbu4@yahoo.com.

The specific objectives of this work are:

a) To determine the extent by which companies use financial ratios in their corporate planning, forecasting and control,
b) To identify reasons for declining use of univariate discriminant analysis in managerial decisions from surveyed companies,
c) Seek to understand the current resorts of "corporate managers" as a financial aid to investment and intercompany decisions,
d) To examine the effects of diminishing use of discriminant analysis on corporate well-being, and
e) To investigate whether or not a given area of univariate discriminant analysis is more diminished in use or not.

In order to achieve the stipulated specific objectives, we postulate the following research questions:

i) Is it true that the uses of financial ratios in many managerial decisions are diminishing?
What are the reasons, if any accounts for the diminishing application of financial ratios in managerial decisions?
ii) In the face of diminishing use of financial ratios, what are the alternative tools employed by corporate managers for investment and other intercompany decisions?
iii) Are there unique financial ratios for which are diminishingly employed by new generation corporate managers?
iv) What are the possible effects of diminishing use of univariate discriminant analysis in managerial and investment decisions in the last five years?

In order to answer the aforementioned stipulated questions, we propose the following hypotheses:

HO_1: The uses of financial ratios in many managerial and investment decisions are not significantly diminished.
HO_2: The use of alternative tools of aiding managerial and investment decisions is not significant.
HO_3: There are not significant effects of diminishing use of univariate discriminant analysis in managerial and investment decisions on the corporate well-being.
HO_4: Diminishing application of major groups of financial ratios in managerial and investment decisions is not significantly different.
HO_5: There is no significant reason for current diminishing use of financial ratios in managerial and investment decisions.

The research methods employed include testing of the stipulated hypotheses with SPSS Pearson chi-square statistical tool and T-test, operating at 95% confidence level. Twenty corporate bodies were surveyed. The sampling methods used are availability and willingness to participate in the survey, large companies based on production levels/wholesale activities and quotations in the stock exchange were used as criteria for selection. The survey design covered administration of question-naire on five top managerial personnel of each of the selected companies, three accounting/finance officers of the said companies and two outside stakeholders of the surveyed companies and leading to the administration of two hundred questionnaires. The questionnaire was designed to cover directly the stipulated research questions; however indirect questions were included to elicit answers for the stipulated research questions.

THEORETICAL FRAMEWORK

Decision making is the most important element in managerial activities of all kinds of enterprises; profit oriented, nonprofit oriented and public institutions. Tools that aid in decision making are varied. One of such tools is "financial statements of companies". Kieso et al. (2007) asserted that financial statements are useful for the assessment of a company's liquidity, solvency and financial flexibility. Financial statements also help in evaluating the past and future performances of the company. In the words of Glautier and Underdown (2001) financial statements generally provide users with essential information that heavily influences their decision.

Financial statements are excellent model for capturing and organizing financial information. According to Gibson (2009), users of financial statements (such as company's managers, stockholders, bondholders, security analysts, suppliers, lending institutions, employees, labor unions, regulatory authorities, Government and the general public) use it to make valued decisions according to their areas of interest. The aforementioned users of financial statements employ the use of accounting ratios as technique of arriving at valued decisions relevant to their interest. For many business organizations today, Accounting has become a major tool for planning and controlling their business activities. The significance of the role of accounting in the life of any organization is reflected in the words of Murdick (1978: 15). "For centuries, accounting has been the language of business and accounting information has been the basic information ingredient for the efficient management of the business organization. It would be difficult to explain how the modern organization could plan, co-ordinate and control its multitude of activities without the information system". This assertion was supported by Bull (1981:8) who described Accounting as "an area of study concerned with the quantification of economic events in money terms in order to collect, record, evaluate and communicate the results of past events and to aid in decision making".

Financial statements, which are products of accounting

information, are very useful in analyzing the performance of companies or businesses and they serve as important documents through which financial ratios are computed. Glautier and Underdown (2001) asserted that ratio analysis is the most widely used technique for inter-preting and comparing financial reports. Knapp (1996) had earlier made same assertion. Financial ratios are of great importance as management tools, which are used in decision making for the efficiency, survival and growth of a business enterprise. Through financial ratios and their analysis in whatever way possible, the following questions can be answered by the management:

i) Is the company making a satisfactory profit?
ii) Is the company likely to run out of cash sooner or later?
iii) How effectively and efficiently is the company utilizing its resources?
iv) How is corporate growth, present and past being financed?
v) How well can the company convert its inventory into cash?
vi) How is the future growth of the company to be financed?

From the possible answers to the aforementioned questions by the aid of computed accounting ratios, the management can make decisions for the efficiency, survival and growth of its business enterprise. Ratios provide the means of assessing the financial, economic and managerial conditions of the firm. It should be however, be borne in mind that these ratios are not ends in themselves but should be used as means to an end. That is, these financial ratios are applied in corporate decision-making such as in management of Assets and Liabilities as well as the firm's dividend policies. Since accounting ratios are useful in decision –making, corporate managers really try to adopt their utilization well for business efficiency, survival and growth. The financial analyst should combine and transform the entries in the financial statements to extract maximum information from them.

The information so extracted is useful to the investors and creditor of the firm who need them to determine the firm's ability to meet their objectives. According to Gibson (2009) financial reporting is not the end in itself but it is intended to provide information that is useful in making business and economic decisions. A known technique of analyzing of financial statements for decision is ratio analysis. According to NetMBA (2010) financial ratios are useful indicators of a firm's performance and financial situation. It can be used to analyze trends and to compare the firm's financials to those of other firms. Thus accounting ratios shows the relationship between accounting data. Ratios can be found out by dividing one number by another number. Ratios show how one num-ber is related to another. It may be expressed in the form

of coefficient, percentages, proportion or rate. Despite its usefulness, "new generation managers" seem to be moving toward the elimination of univariate analysis which in the financial arena is popularly called ratio analysis as an analytical technique in assessing the performance of the business enterprise. This assertion was foreseen by Altman (1968), however use of ratios in managerial decisions have a deep root and long history in the evaluation of business affairs. Effect of individual ratio or group of ratios on performance appraisal of a firm is referred as univariate in nature. According to Altman (1968), analysis on potential use of ratios such as profitability, liquidity and solvency can elicit effective indication of impending problems or improvements in firm's performance is univariate in methodology.

According to Kabera (2010), Ratios analysis simplifies, summarizes and systematizes a long array of accounting figures. Its main contribution lies in bringing out the inter-relationship which exists between various segments of business. Ratios are more of a diagnostic tool that helps to identify problem areas and opportunities within a company.

TYPES OF ANALYSIS USING ACCOUNTING RATIOS IN DECISIONS MAKING

Leach and Melicher (2006) broadly classified ratios into three: Trend analysis (which deals with examining the venture's performance over time), cross-sectional analysis (which centers on comparing a venture's performance against other specific firms at a similar stage of maturity or in a related industry) and Industry comparables analysis (which concerns with the com-parison of a venture's performance against an average for the venture's industry). In the words of NetMBA.com (2010), financial ratios can be classified according to the information they provide. The following types of ratios frequently are used:

i) Liquidity ratios.
ii) Asset-equity ratios/leverage ratios.
iii) Sales and profitability ratios.
iv) Efficiency ratios.

Analyzing liquidity

Emekekwue (2005) opined that liquidity ratio measures the level of preparedness of a firm to meet its obligations in short notice. Liquid assets are those assets that can be converted into cash quickly. Reeve and Warren (2008) asserted that liquidity may be diagnosed into "current ratio" and "quick ratio". According to Reeve and Warren (2008), quick assets are cash, receivables and other current assets that can quickly be converted into cash. The short-term liquidity ratios show the firm's ability to

meet short-term obligations. Thus a higher ratio of (1:2) would indicate a greater liquidity and lower risk for short-term lenders. The rule of thumb (for acceptable values): current ratio (2:1), quick ratio (1:1), while high liquidity means that the company will not default on its short-term obligations, note that by retaining assets as cash, valuable investment opportunities might be lost. Obviously, cash by itself does not generate any return only if it is invested, we will get future return. In quick ratio, we subtract the inventories from total current assets since they are the least liquid. According to Pandy (1995) since the cash is the most liquid asset, a financial analyst may examine the ratio of cash and its equivalent to current liabilities. Trade investment and marketable securities are equivalent of cash; therefore they may be included in the computation of current ratio. Each of the mentioned liquidity ratio is computed thus:

i) Current ratio = total current assets/total current liabilities.
ii) Quick or acid-test ratio = total current assets - inventories/total current liabilities.
iii) Cash ratio = cash + marketable securities/current liabilities.

These ratios show the extent to which a firm is relying on debt to finance its investments/operations and how well it can manage the debt obligation. Obviously, if the company is unable to repay its debt or make timely payments of interest, it will be forced into bankruptcy. On the positive side, use of debt is beneficial as it provides valuable tax benefits to the firm. Note total debt should include both short-term debt (bank advances + current portion of long-term debt) and long-term debt (such as bonds, leases and notes payable).

Asset-equity ratio or leverage ratios

Knapp (1996) is of the view that "financial leverage" refers to the degree of a business relying on debt instead of equity to finance its operations. This shows firm's reliance on external debt for financing (or the degree of leverage). Any number above 100% shows that the company relies on external debt for financing some of its assets. If the number equals 100%, it implies that the assets are fully financed by the shareholders. Some analysts tend to use the debt ratio (given by total debt/total assets) or debt/equity ratio given by total long-term debt/equity). These ratios also show company's reliance on external sources for financing its assets.

They are computed thus:

i) Total debt ratio = total debt/total assets.
ii) Debt-equity ratio = total debt/equity.
iii) Long-term debt to capital = debt/debt + equity.

For a lender, more important than the degree of leverage is the firm's ability to service the debt and this is captured in the following ratios:

Analyzing sales and profitability

Kishore (2004) writing on profitability asserted that profitability ratios help assess the adequacy of profits earned by the company and also to discover whether profitability is increasing or declining. The following are ratios selected to analyse profitability and sales:

i) Sales growth rate = [(Current year sales - last year sales)/last year sales] x 100.
ii) Expense analysis = various expenses /sales.
iii) Gross margin/sales = gross profit/total sales.
iv) Operating profit/sales = operating profit/net sales.
v) EBIT to sales = EBIT/net sales.
vi) Return on sales (ROS) or net profit ratio = net income/net sales.
vii) Return on investment (ROI) = net income/total assets.
viii) Return on assets (ROA) = net income/total assets.
ix) Return on equity (ROE) = EAT/Shareholders' equity.
x) Payout ratio = cash dividends/ net income.
xi) Retention ratio = retained earnings/net income.
xii) Sustainable growth rate (SGR)= ROE x retention ratio.
xiii) 13 ROE = (net income/sales) x (sales/assets) x (assets/equity).

Analyzing efficiency

Ross et al. (2002) explained this ratio as the ratios that show the ability of the firm to control its investment in "assets". It measures how effectively the firm's assets are being managed. These ratios reflect how well the firm's assets are being managed. The inventory ratios show how fast the inventory is being produced and sold.

Trend analysis

Gibson (1989) asserted that using the past history of a firm for comparison is called trend analysis. By looking at the trend in a particular ratio, one sees whether that ratio is failing, rising or remaining relatively constant. From this, a problem is detected or good management is observed.

USES OF FINANCIAL RATIOS

Obasi (2004) citing Gulthman says that ratio is an expression of relationship of one figure with another and it is used to analyze firm's performance. It compares

present year's performance with previous years and makes for intercompany comparison. Van Horne and Wachowicz (2005) agreed with Obasi as they opined that to make decisions in keeping with the objectives of the firm, the financial manager must have analytical tools. Ratio analysis is a useful tool of financial analysis and planning. Glautier and Underdown (2001) asserted that ratios are useful because the can be used to summarize briefly relationships and results that are significant to an appreciation of critical business indicators of performance. Ratios are used to set benchmarks or standards for performance. Njoku and Jomobo (2003) asserted that analysis of financial statements means the process of breaking down a complex set of facts into simple elements such as ratios. They went further to assert that such analysis will help users of financial statements to extract meaningful information and guidelines for arriving at useful conclusions. In using financial statement analysis, decision-making must judge whether the relationships they have formed are favourable. Three standards of companies are often used, one is the rule of thumb measurement, the second is the past performance of the company, and the third is the industry norms.

a) Regarding rule-of-thumb measures for key financial ratios, many financial analyses are dogmatic in its application. For example, it has long been thought that a current ratio (current assets divided by current liabilities) of 2:1 is acceptable. Nonetheless, if the current assets are made up of mainly liquid assets, a lower ratio may still be acceptable). These known established industrial or academic stipulations are regarded as rule of thumb. There are three limitations of using industry norms as standards:

(a) One is that operations of any two companies in the same industry may be within different scopes and therefore cannot accurately be compared (Obasi 2004).
(b) Another limitation is that most large companies today operate in more than one industry. Some diversified companies or conglomerates operate in many unrelated industries and have different rates of profitability and degrees of risk (Gibson, 2009).
(c) The third limitation of industry norms is that companies in the same industry with similar operation measures for similar assets. If little information is available about a company's prior performance, industry norms probably offer the best available standards for judging a company's current performance (Omuya and Wood, 1989).

Ratios are used to highlight areas that need to be improved or highlight areas that offer the most promising future potential to firm's stakeholders and to enable external parties (such as investors/lenders) in assessing the creditworthiness/profitability of the firm. In the words of Omuya and Wood (1989), "interpretation of accounts is the analysis of financial statements in order to discover

the strength and weaknesses of a company and to reveal underlying trends in its activities.

These interpreted accounts have variety of users: each with an interested area of focus.

Basically, the main parties interested in accounts include share holders and potential shareholders, creditors, lenders, the Government (for taxation and statistical purpose), potential take-over bidders, employees (particularly through their trade union) as well as management".

The listed users of financial statements have the blessings of Unegbu (2007) and Messier et al. (2008). According to them:

The management

Management would want to know how well they have preformed. Have they been able to do better than they achieved in the previous years?
How has their performance compared with budget and forecast?
How well have they managed the company's resources?

Owners or shareholders

The owners of the business (shareholders in the case of limited liability company) would like to know if the return they get from the business by way of profit is adequate, having regard to the risk involved in the business. They are also interested in the prospects of growth and value of the firm.

Banker and creditors

These groups are interested in the solvency and liquidity of the business; the ability of the business to generate enough funds pays its debts in all circumstances.

Prospective investor

This group will be interested in finding out how stable the business is and what likely return on investment in the business.

Other outsiders

These include financial journalists and commentators, potential take-over bidders, employees, etc; who may use a comparison to draw conclusions about that particular industry.

Government

a) As a provider of finance or guarantees in various forms

for industrial development, the government requires information on a company similar in kind to the requirement of an investor or a lender, which has been discussed earlier.

b) The government carries out a number of regulatory functions, which are based on the published accounts of companies, in some cases with adjustments made for particular purpose. These functions comprise; price controls, controls over monopolies and restrictive practices, operation of fair trading regulations etc.

c) The other main requirement of government is for information on which to base taxation.

Ratios are important tools to evaluate performance of organizations. The aforementioned users of interpreted account see ratios as indispensable tool to appraise the performance of any given organization. The importance of ratio analysis to these various interest groups will best be appreciated when one realize that the intrinsic values of organizations can only be brought to light through the calculation of ratios. The actual operations for a company during the period are reported to superiors and outside parties through the income statement. The financial position of the firm at the end of the accounting period is reported through the balance sheet; whereas the changes in financial position in the firm during the period are reported through the cash flow statement. Then, it is the function of financial control to detect problems so the remedial actions can be taken. This function is done through ratio analysis. Ratio analysis is one tool used to test the firm's liquidity, profitability, earning power and long term solvency.

LIMITATIONS OF FINANCIAL RATIOS

There is considerable subjectivity involved as there is no theory as to what should be the right number for the various ratios. Further, it is hard to reach a definite conclusion when some of the ratios are favourable and some are unfavourable. According to accountingformanagement.com (2010), ratios are based only on the information which has been recorded in the financial statements. Financial statements themselves are subject to several limitations for example non-financial changes though important for the business are not recorded by financial statements and thus affects ratio outcomes. Financial statements are also affected to a great extent by accounting conventions and concepts. In the words of Omopariola (2006), ratios may send different signals to managers. He however advised that to deal with the conflicting signals, manager has to carefully weigh and balance the needs for example liquidity with needs for profitability. Ratios may not be strictly comparable for different firms due to a variety of factors such as different accounting practices, different fiscal year. Also such comparisons only provide in the words of

accoutingformanagement.com (2010) glimpse of the past performance and forecasts for future may not prove correct since several other factors affect the future operations. Thus ratios are based on financial statements that reflect the past and not the future. Unless the ratios are stable, one cannot make reasonable projections about the future trend.

Financial statements provide an assessment of the costs and not value. For example, the market value of items may be very different from the cost figure given in the balance sheet.

NetMBA (2010) asserted that ratios may not be true representatives of facts that occurred during the year because certain account balances that are used to calculate ratios may increase or decrease at the end of the accounting period as a result of seasonal factors. Such changes may distort the value of the ratio thus end year values used for computing ratios may not be true representatives of events in a year. Financial statements do not include all items. For example, it is hard to put a value on human capital (such as management expertise). Different accounting standards and practices vary across countries and thus hamper meaningful global comparisons.

Leach and Melicher (2006) are of the view that industry comparisons can be misleading for a number of reasons example is comparing a new venture's performances with others in an old industry. Not only industries differ in their nature, but also the firms of the similar business widely differ in their size and accounting procedures. It makes comparison of ratios difficult and misleading. Ormiston and Fraser (2000) asserted that the use of univariate analysis for managerial decision is not encouraging because the analysis of any firm's financial statements consists of a mixture of steps and pieces that interrelate and affect each other. No one part of the ratio analysis should be interpreted in isolation. Short-term liquidity impacts profitability.

Profitability begins with sales, which relate to the liquidity of assets.

The efficiency of asset management influences the cost and availability of credit, which shapes the capital structure. Every aspect of a firm's financial condition, performance and outlook affects the share price.

The most difficult task of financial analysis is to integrate the separate pieces into a whole, leading to conclusions about the business enterprise. Atkinson et al. (2004) agreed to Ormiston and Fraser (2000) assertion but they added that for a ratio analysis to be more meaningful, the trends of these values and their comparison to industry averages puts the ratios in context and supports interpretation.

Despite the aforementioned assertions of Knapp (1996), Glautier and Underdown (2001) and Van Horne and Wachowicz (2005) that ratio analysis is the most widely used technique for analyzing, comparing and interpreting financial reports, it is interesting that new

Table 1. Evaluation of declining use of univariate analysis in managerial decisions.

Responses	Top mgt.	Chief finance officers	Outside stakeholders	Total
Yes	70	45	5	120
No	30	15	35	80

generation managers are jettisoning its adoption in reaching decisions.

This research intends to unveil the reasons for that decline, what they are resorting to and effects of such a decline on investment and inter-company transactions.

SHORT REVIEW OF STATISTICAL TOOLS EMPLOYED FOR DATA ANALYSIS AND HYPOTHESIS TESTING

Chi-square

According to Shenoy and Pant (2007), statistical tool suited for comparing the values of categorical variables such as 'yes' or 'no', 'male' or 'female' as to their relationships is 'Chi-square'. According to Field (2005), X^2 main focus is to compare the frequencies observed in certain events to the frequencies expected to get in those events by chance. In the words of Shenoy and Pant (2007), X^2 is used to determine whether a significant difference exists between the observed and expected ones and how close are they if they are not equal. Bluman (2007) wrote that the Null hypothesis and alternative hypothesis for X^2 is stated thus:

H_0: There is no significant difference between observed data and expected data in the event.
H_1: There is significant difference between observed data and expected data in the event.

McClave et al. (2005) are of the view to use SPSS to compute for the Chi-square, the variables should be coded and same group entered into one column. They went further to assert that the execution of Chi-square is carried out thus; Analyze $\Rightarrow$ descriptive statistics $\Rightarrow$ crosstabs. (The appropriate weight criteria indicated). Field (2007) went further to assert that the decision rule is to analyze the outcome of the SPSS result and infer whether there is an association between the categorical variables. If the significance value is small enough, then we reject the hypothesis that the variables are independent and accept the hypothesis that they are in some way related.

ANOVA (ANALYSIS OF VARIANCE)

ANOVA is a statistical method of comparing the means of several populations (Adefila, 2008) and Levine et al.

(2005) explained that ANOVA is used to compare the means of the groups and it is an extension of the t-Test which compares the means of two populations only. Bluman (2007) earlier stated, went further to assert that the hypothesis for ANOVA are stated thus:

Ho: $\mu_1 = \mu_2 =........ \mu_n$ and H_1: At least one mean is different from the others.

DECISION RULE IN ANOVA

Both McClave et al. (22005) and Bluman (2007) stated that the decision rule in ANOVA are: If there is no difference in the means, the between-group variance estimate will be approximately equal to the within-group variance estimate and the F test will be approximately equal to 1. The Null hypothesis will be accepted. When the means differ significantly, the between-group variance will be much larger than the within-group variance and the F test value will be significantly greater than 1. The Null hypothesis will be rejected. Using SPSS to conduct one-way ANOVA, at the dialogue box select:

Analyze $\Rightarrow$ compare means $\Rightarrow$ one-way ANOVA.

Presentation of results

Question 1: Is it true that the uses of financial ratios in many managerial decisions are diminishing? (Table 1).
Question 2: What are the reasons for the diminishing use of ratios in managerial and investment decisions? (Table 2).
Question 3: In the face of diminishing use of financial ratios, what are the alternative tools employed by corporate managers for investment and other managerial decisions? (Table 3).
Question 4: Which of the following class of ratios is mostly diminishingly employed by new generation corporate managers? (Table 4).
Question 5: What are the possible effects of diminishing use of univariate discriminate analysis by new corporate managers on the corporate well-being for the last five years? (Table 5).

Analyses, hypothesis testing and discussions of results

Table 1 results showed categorical data or outcomes

Table 2. Evaluation of reasons for declining use of univariate analysis in managerial and investment decisions.

Responses	Top mgt.	Chief finance officers	Outside stakeholders	Total
Ratios are not realistic, financial statements and accounts are prepared to meet up with targets, and/or many financial statements are falsified.	5	10	6	21
Increasingly use of decision models, multiple discriminant analysis superior results.	45	7	2	54
Availability of stock exchange daily trading index.	10	4	14	28
Ratios are obsolete decision variables; It is not pragmatic decision variable or high inflation rates.	25	21	6	52
Recent collapse of stock values in the Nigerian stock exchange markets.	10	11	10	31
Other reasons.	5	7	2	14

Table 3. Evaluation of management resorts on the face of diminishing use of financial ratios in investment and managerial decisions.

Responses	Top Mgt.	Chief finance officers	Outside stakeholders	Total
Decision models, multiple discriminant analysis, predictive models.	25	40	2	67
Informal contacts.	40	10	6	56
Use of consultants, experts, financial analysts, brokers.	30	5	20	55
Auditors' reports, stock market daily indices.	5	5	12	22

Table 4. Evaluation of class of ratios that are mostly diminished in use by new corporate managers.

Responses	Top Mgt.	Chief finance officers	Outside stakeholders	Total
Liquidity ratios	10	5	8	23
Asset management ratios	20	5	4	29
Debt management ratios	25	10	3	38
Profitability ratios	5	10	13	28
Investment/market value ratios	40	30	12	82

drawn from the same population. Towards this end, the analysis of Table 1 for T-test processing appeared thus: (Table 6) and the outcome of the SPSS on execution appeared thus: (Table 7 to 9).

DISCUSSIONS

Testing of null hypothesis 1

The uses of financial ratios in many managerial and investment decisions are not significantly diminished. The results of Tables 7 and 8 showed that 60% of the respondents are of the view that the use of financial ratios in many managerial and investment decisions are

significantly diminished in the last five years. The value of the chi-square statistic is 47.40, at two degrees of freedom and it was significant at $p < 0.0001$, therefore we reject the null hypothesis which stated that the uses of financial ratios in many managerial and investment decisions are not significantly diminished and we accept the alternative hypothesis that advocated that the uses of financial ratios in many managerial and investment decisions are significantly diminished.

Testing of null hypothesis 2

The use of alternative tools of aiding managerial and investment decisions is not significant. Coding responses

Table 5. Evaluation of the effects of diminishing use of univariate discriminate analysis on the corporate wellbeing for the last five years.

Responses	Top Mgt.	Chief finance officers	Outside stakeholders	Total
No effects.	15	5	2	22
Lack of significant investments in the shares of companies, lack of public trust on corporate reports.	45	27	20	92
Fall of market value perceptions on stocks, uncertainties on real stock values.	8	2	3	13
Growth of family businesses, small scale businesses and/or private companies.	12	4	8	24
Significant reliance on consultants, auditors' reports, brokers and/or financial analysts rather than on financial statements for investment decisions.	20	22	7	49

Table 6. T-test input data.

Responses group	Respondents	Outcomes
0.	Top management	70.0
1.	Top management	30.0
0.	Chief finance officers	45.0
1.	Chief finance officers	15.0
0.	Outside stakeholders	5.0
1.	Outside stakeholders	35.0

1 to 4 and respondents 1 to 3, the result appeared in Table 10. To test for H_2, we employ ANOVA statistical tool on Table 10 as shown earlier. The result appeared thus (Tables 11 to 13).

Discussions on outcome of hypothesis 2

Table 11 shows the standard deviations, means and standard errors of each of the resorts. Table 12; Levene's tests which tests that the null hypothesis that managerial resorts on the face of diminishing use of financial ratios in investment and managerial decisions is not significant, therefore, we read the outcome of ANOVA from 'between group' or equal area of ANOVA shown in Table 13, thus accepting the null hypothesis since P > 0.05. The result showed that P = 0.651 which is greater than 0.05. We therefore conclude that the management resorts in the face of diminishing use of financial ratios are not significant.

Testing of null hypothesis 3

There are no significant effects of diminishing use of

univariate discriminant analysis in managerial and investment decisions on the corporate well-being. To test hypothesis 3, Table 5 results were coded to appear (Table 14) thus:

Discussions on outcome of hypothesis 3

The outcome of Levene's test shown in Table 15 is insignificant, thus prompting ascertainment of ANOVA analysis result shown in Table 16 from 'between groups' which shows that p = 0.013 (significant). We conclude therefore that there is a significant effect on the corporatewell-being by the diminishing use of univariate discriminant analysis in managerial and investment decisions, thus rejecting the null hypothesis that states to the contrary.

Testing of null hypothesis 4

Diminishing application of major groups of financial ratios in managerial and investment decisions is not significantly different. In order to test the hypothesis, we employed ANOVA statistical tool to analyze Table 4. The

Table 7. Evaluation of diminishing use of univariate analysis Crosstab.

			Top management	Chief finance officers	Outside stakeholders	Total
				Respondents		Total
Reponses	Yes	Count	70.000	45.000	5.000	120.000
		Expected count	60.0	36.0	24.0	120.0
		% within responses	58.3	37.5	4.2	100.0
		% within respondents	70.0	75.0	12.5	60.0
		% of total	35.0	22.5	2.5	60.0
	No	Count	30.000	15.000	35.000	80.000
		Expected count	40.0	24.0	16.0	80.0
		% within reponses	37.5	18.8	43.8	100.0
		% within respondents	30.0	25.0	87.5	40.0
		% of total	15.0	7.5	17.5	40.0
Total		Count	100.000	60.000	40.000	200.000
		Expected count	100.0	60.0	40.0	200.0
		% within reponses	50.0	30.0	20.0	100.0
		% within Respondents	100.0	100.0	100.0	100.0
		Total (%)	50.0	30.0	20.0	100.0

Table 8. Evaluation of diminishing use of univariate analysis in decisions of Chi-square tests.

Variables	Value	df	Asymp. sig. (2-sided)	Exact sig. (2-sided)	Exact sig. (1-sided)	Point probability
Pearson Chi-square	47.396[a]	2	0.000	0.000		
Likelihood ratio	49.410	2	0.000	0.000		
Fisher's exact test	48.293			0.000		
Linear-by-linear association	28.579[b]	1	0.000	0.000	0.000	0.000
N of valid cases	200					

a) 0 cells (0.0%) have expected count less than 5. The minimum expected count is 16.00. b) The standardized statistic is 5.346.

Table 9. Evaluation of diminishing uses of univariate analysis in decisions symmetric measures.

Variables		Value	Approx. sig.	Exact sig.
Nominal by nominal	Phi	0.487	0.000	0.000
	Cramer's V	0.487	0.000	0.000
	Contingency coefficient	0.438	0.000	0.000
7N of Valid Cases		200		

SPSS output appeared (Tables 17 to 19) thus:

Discussion on testing hypothesis 4

The descriptive data on diminishing application of major groups of financial ratios are shown in Table 17. The result of Levene's test for ANOVA is that it is not significant. The ANOVA outcome shown in Table 19 led us to accept the null hypothesis which states that diminishing application of major groups of financial ratios in managerial and investment decisions is not significantly different as P= 0.136.

Testing of null hypothesis 5

HO$_5$: There is no significant reason for current

Table 10. Analyzed for ANOVA.

Reponses	Respondents	Frequency
1.0	1.0	25.0
1.0	2.0	40.0
1.0	3.0	2.0
2.0	1.0	40.0
2.0	2.0	10.0
2.0	3.0	6.0
3.0	1.0	30.0
3.0	2.0	5.0
3.0	3.0	20.0
4.0	1.0	5.0
4.0	2.0	5.0
4.0	3.0	12.0

Table 11. Descriptive data on managerial resorts.

Variables	N	Mean	Std. deviation	Std. error	95% confidence interval for mean		Minimum	Maximum
					Lower bound	Upper bound		
Decision models, multiple discriminant analysis, predictive models.	3	22.33	19.140	11.050	-25.21	69.88	2	40
Informal contacts.	3	18.67	18.583	10.729	-27.50	64.83	6	40
Use of consultants, experts, financial analysts, brokers.	3	18.33	12.583	7.265	-12.92	49.59	5	30
Auditors' reports, stock market daily indices.	3	7.33	4.041	2.333	-2.71	17.37	5	12
Total	12	16.67	13.983	4.036	7.78	25.55	2	40

Table 12. Test of homogeneity of variances on managerial resorts.

Variables			
Levene statistic	df1	df2	Sig.
1.817	3	8	0.222

Table 13. ANOVA on managerial resorts.

Variables			Sum of squares	df	Mean square	F	Sig.
	(Combined)		378.000	3	126.000	0.569	0.651
Between groups	Linear term	Contrast	308.267	1	308.267	1.391	0.272
		Deviation	69.733	2	34.867	0.157	0.857
	Quadratic term	Contrast	40.333	1	40.333	0.182	0.681
		Deviation	29.400	1	29.400	0.133	0.725
Within groups			1772.667	8	221.583		
Total			2150.667	11			

Table 14. Shows the coded of responses and respondents and the outcomes.

Responses	Respondents	Frequencies
1.0	0.0	15.0
1.0	1.0	5.0
1.0	2.0	2.0
2.0	0.0	45.0
2.0	1.0	27.0
2.0	2.0	20.0
3.0	0.0	8.0
3.0	1.0	2.0
3.0	2.0	3.0
4.0	0.0	12.0
4.0	1.0	4.0
4.0	2.0	8.0
5.0	0.0	20.0
5.0	1.0	22.0
5.0	2.0	7.0

Table 15. Test of homogeneity of variances effects of diminishing use of financial ratios.

	Variables		
Levene statistic	df1	df2	Sig.
2.479	4	10	0.111

Table 16. ANOVA on diminishing use of financial ratios.

Variables			Sum of squares	df	Mean square	F	Sig.
	(Combined)		1364.667	4	341.167	5.587	0.013
Between groups	Linear term	Contrast	6.533	1	6.533	0.107	0.750
		Deviation	1358.133	3	452.711	7.413	0.007
	Quadratic term	Contrast	0.000	1	0.000	0.000	1.000
		Deviation	1358.133	2	679.067	11.120	0.003
Within groups			610.667	10	61.067		
Total			1975.333	14			

Table 17. Descriptives data on diminishing application of major ratios.

Variables	N	Mean	Std. deviation	Std. error	95% confidence interval for mean		Minimum	Maximum
					Lower bound	Upper bound		
Liquidity ratios.	3	7.6667	2.51661	1.45297	1.4151	13.9183	5.00	10.00
Asset management ratios.	3	9.6667	8.96289	5.17472	-12.5984	31.9317	4.00	20.00
Debit management ratios.	3	12.6667	11.23981	6.48931	-15.2546	40.5879	3.00	25.00
Profitability ratios.	3	9.3333	4.04145	2.33333	-.7062	19.3729	5.00	13.00
Investment/market value ratios.	3	27.3333	14.18920	8.19214	-7.9146	62.5813	12.00	40.00
Total	15	13.3333	10.80785	2.79057	7.3481	19.3185	3.00	40.00

Table 18. Test of homogeneity of variances on diminishing application of major ratios.

Variable			
Levene statistic	df1	df2	Sig.
2.278	4	10	0.133

Table 19. ANOVA on diminishing application of major ratios.

Variable			Sum of squares	Df	Mean square	F	Sig.
	(Combined)		774.000	4	193.500	2.247	0.136
Between groups	Linear term	Contrast	456.300	1	456.300	5.298	0.044
		Deviation	317.700	3	105.900	1.229	0.350
	Quadratic term	Contrast	141.167	1	141.167	1.639	0.229
		Deviation	176.533	2	88.267	1.025	0.394
Within groups			861.333	10	86.133		
Total			1635.333	14			

Table 20. Descriptives data on reasons for diminishing use of ratios.

Variable	N	Mean	Std. deviation	Std. error	95% confidence interval for mean		Minimum	Maximum
					Lower bound	Upper bound		
Ratios are not realsitiic, Financial statements and accounts are prepared to meet up with targets and/or many financial statements are falsified.	3	7.0000	2.64575	1.52753	0.4276	13.5724	5.00	10.00
Increasing use of decision models, Multiple discriminant analysis superior results.	3	18.0000	23.51595	13.57694	-40.4169	76.4169	2.00	45.00
Availability of Stock exchange daily trading index	3	9.3333	5.03322	2.90593	-3.1699	21.8366	4.00	14.00
Ratios are obsolete decision variables, It is not pragmatic decision variable, High inflation rates.	3	17.3333	10.01665	5.78312	-7.5494	42.2161	6.00	25.00
Recent collapse of Stock values in the Nigerian Stock Exchange Markets.	3	10.3333	0.57735	.33333	8.8991	11.7676	10.00	11.00
Other reasons	3	4.6667	2.51661	1.45297	-1.5849	10.9183	2.00	7.00
Total	18	11.1111	10.37468	2.44534	5.9519	16.2703	2.00	45.00

diminishing use of financial ratios in managerial and investment decisions. Table 2 became relevant for data input in testing HO_5, using ANOVA as instrument of analysis. The outcome appeared (Tables 20 to 22) thus

Table 21. Test of homogeneity of variances on reasons for diminishing use of ratios.

Variable			
Levene statistic	**df1**	**df2**	**Sig.**
8.569	5	12	0.001

Table 22. ANOVA on reasons for diminishing use of ratios.

Frequency							
			Sum of squares	Df	Mean square	F	Sig.
Between groups	(Combined)		445.111	5	89.022	0.771	0.588
	Linear term	Contrast	30.476	1	30.476	0.264	0.617
		Deviation	414.635	4	103.659	0.898	0.495
Within groups			1384.667	12	115.389		
Total			1829.778	17			

Discussions on outcome of hypothesis 5

The outcome of Levene's test is significant as seen from Table 21, so we read our ANOVA analysis from within groups result which showed that P = 0. 495. We therefore conclude that among the reasons outlined for current diminishing use of financial ratios in managerial and investment decisions, none is more significant than the other.

CONCLUSION

It is interesting to note that this research showed that 60% of the respondents acknowledged that there is diminishing use of financial ratios in investment and other managerial decisions in Nigeria. This has significant ripple effects to International Financial system, but should be subjected to further research studies. It is interesting to note that 27% of the respondents were of the view that increasing use of decision models and its superior results accounts for the diminishing use of financial ratios, while 26% asserted that the major cause of diminishing use of financial ratios in investment and other managerial decisions were obsolete nature of ratios at the time of their been ready for use and its non-pragmatic tastes for decisions. A surprising new corporate managerial resorts is the use of informal contacts, though majority of the respondents (33.5%) did assert reliance on decision models, predictive models and other multiple discriminant analysis. Evaluation of group of ratios that are mostly diminished in use showed that 41% of the respondents pointed at investment and market value ratios. Other findings showed that 46% of the respondents were of the view that the major effect of diminishing use of financial

ratios is lack of public trust on corporate reports and lack of significant investments in the shares of companies. This has led to growth of family businesses and private companies in Nigeria as opined by 12% of the respondents. In conclusion, we found out that there is significant diminishing use of financial ratios in investment and other managerial decisions in Nigeria in the last five years but the individual resorts to alternative decision aids were found not to be significant. On the effect of diminishing use of ratios on corporate well-being for the last five years, we discovered a significant effect but none of the major class of ratios was significantly diminished in use than the other.

We recommend that a research on this be conducted on a national scale to enable a more accurate generalize-tion, and were the resources abound a comparative study of countries' use of univariate analysis for conclusive assertions and effects on International Finance.

REFERENCES

AccoutingforManagement.Com (2010). Accounting ratios www.accountingformanagement.com/financial_statement_analysis_accounting_ratios assessed on 22/11/2010.

Adefila JJ (2008). Research Methodology in Behavioural Sciences Apani Publications, Kaduna Nigeria, pp. 170 -173.

Altman IE (1968). Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy. J. Fin., 4: 590.

Atkinson A, Anthony AA, Kaplan S, Robert Young SM (2004). Management Accounting 4th Ed Pearson Education Limited Japan, p. 569.

Bluman AG (2007). Elementary Statistics (A Step by Step Approach) McGraw-Hill Companies, USA, p. 485.

Bull RJ (1981). Accounting in Business: The Garden city Press Ltd. Lectchworth Herts. England, p. 263.

Emekekwue P (2005). Corporate Financial Management 5ed. African Bureau of Educational Sciences Kinshasa, DRC. p. 565.

Field A (2005). Discovering Statistics Using SPSS Sage Publications,

London, pp. 269- 362, 681- 700.

Gibson HC (1989), Financial Statement Analysis: using financial accounting information, 4th edition, PWS-KENT publisher company, Boston. p. 123.

Gibson HC (2009). Financial Reporting and Analysis 11th edition. Thomson, South-Western. p. 12.

Glautier MWE, Underdown B (2001). Accounting theory & Practice 7ed Prentice-Hall England. p. 244.

Kabera L (2010). The use of accounting ratios in decision making www.webmaster@memioronline.com assessed on 20/11/2010.

Kieso DE, Weygant JJ, Warfield TD (2007). Intermediate Accounting 12th edition John Willey & Sons, New York. p. 567.

Kishore MR (2004). Cost Accounting & Financial Management 2ed Taxmann Allied Services Ltd New Delhi p. 507.

Levine DM, Stephen D, Krehbiel TC, Berenson ML (2005). Statistics for Managers Using Microsoft Excel 4ed Pearson Education, Inc, New Jersey. p. 201

McClave JT, Benson GP, Sincich T (2005). Statistics for Business and Economics 9ed Pearson Education, Inc, New Jersey. p. 608.

Messier WF, Gover S, Prawitt D (2008). Auditing & Assurance Services 6ed McGraw-Hill/Irwin New York pp. 36-39.

Murdrick RG (1978). Accounting Information System: New Jersey, Prentice Hall INC. Eagle wood cliffs.

NetMBA (2010). Financial Ratios www.netmba.com/finance/financial/ratios assessed on 19/11/2010

Njoku PO, Jomobo CO (2003). Fundamentals of Business Finance and Financial Management Barloz Publishers Ltd Owerri, Nigeria.

Obasi OC (2004). Theory and Practice of Managerial Accounting for Decision Making. Rhyce Kerex Publishers Enugu Nigeria.

Omopariola O (2006). Business Finance in Nigeria Obafemi Awolowo University Press Ltd Nigeria. p. 57

Omuya JO, Wood F (1989). Business Accounting 2 Hong Kong: Longman Group Limited.

Ormiston A, Fraser ML (2000). Understanding Financial Statements 6ed Prentice-Hall Inc. New Jersey. p. 183.

Pandy IM (1995). Financial Management Vani Educational Books New Delhi, p. 112.

Reeve JM, Warren CS (2008). Principles of Financial and Managerial Accounting 9ed Thomson South-Western Corporation. p. 461

Ross A, Stephen, Randolph WW, Jaffe J (2002). Corporate Finance 6ed McGraw-Hill Higher Education p. 33.

Shenoy GV, Pant M (2007). Statistical Methods in Business and Social Sciences Macmillan India Ltd, Mumbai India. pp. 107, 126.

Unegbu AO (2007). Advanced Financial Accounts 2ed. Shack Publishers Nigeria. p. 161

Van-Horne CJ, Wachowicz MJ (2005). Fundamentals of Financial Management 12ed Pearson Education Edinburgh, England p. 126.