UNDERSTANDING THE IMPACT OF REGRESSION AND CORRELATION ANALYSIS IN ENHANCING DECISION MAKING

Achilike .I. Nicholas Ph.D[*]

Akuwudike .C. Hilary Ph.D[**]

ABSTRACT

Decision making is all about selecting a course of action among various courses of action. In the past, managers adopts qualitative approach in decision making, but nowadays, quantitative approach in decision making is in vogue because decision making is critical for the progress of every business and regression and correlation analysis are among such quantitative approaches. This work therefore is aimed at understanding the impact of regression and correlation analysis in enhancing decision making in an organization, it equally investigates how regression and correlation analysis could be used to observe, note, form and measure what is happening in an organization in a systematic way and using such result to take decision for the progress of the organization. The data for the study were obtained from intensive/ unstructured interviews. While the secondary data were from journal articles, Textbooks and chiefly internet materials. The study revealed that the conduct of regression and correlation analysis help business to investigate the determinants of key variables such as her sales. Equally, regression and correlation help managers and business owners forecast future conditions, lend quantitative support to managers judgement, point out flaws in management thinking and provide new insights that can help company decision makers move their business towards a more profitable

[*] Department Of Accountancy/Business Administration . Federal University Ndufu-Alike Ikwo Abakaliki Ebonyi State Nigeria. P.M.B 1010

[**] Department Of Business Administration, Hezekiah University, Umudi Nkwerre Imo State Nigeria

future and equally, provides solutions when there is movement of one variable caused by changes in one phenomenon or variation.The study concludes that taking decsison based on intuition may be harmful and detrimental to the progress of an organization. therefore, decision making should be based on scientific approach. Based on our findings, we recommend that every business organizations, especially those in the beverage industries should intensify efforts in adopting regression and correlation analysis, not only it will enhance the company's decision making process, but following its forecating and budgetary processes will improve the company's profitability through increased sales and improvement of performance interms of shareholders wealth.

Keywords: Regression**,** Correlation and Decision making

INTRODUCTION

1.1 Background of the Study

Decision making is a prime responsibilty of a manager in any organization. It is an activity inherent in all the functions of management. It is the process of making judgement of what is to be done and what not to do after alternatives are considered. The decision making process is normally activated when the manager perceives a problem to be solved. In the view of Peter Drucker, approach to decision making should be quantitative and not qualitative. In the past, managers make use of their judgement or intuition in decision making, but scientific approach in decision making was advocated by Drucker, because decision making should be based on facts and not on intuition. Randolf (2008), posited that business forecasting is one of the quantitative approach to decision making. Business forecasting is essential for the survival of companies of all sizes. The building block used forecasting and historical data or the past performance of the business to predict future results   (Randolf,2008). Regression and correlation analysis are statistical techniques used to find relationships between independent and dependent variables.

In statistics, regression analysis is a statistical process for estimating the relationships among variables. It includes many techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables. More specifically, regression analysis helps one understand how the typical value of the

dependent variable changes when any one of the independent variable is varied, while the other independent variable are held fixed. Regression analysis applies to almost any field. In general, regression analysis identifies relationships based on independent variables. For example, a dependent variable is your company's sales and independent variable may be interest rates. Governments and businesses use regression analysis as a predictive tool for forecasting purposes. Regression analysis measure the strength or correlation between the dependent and independent variables.

Correlation is a term that refers to the strength of a relationship between two variables. A strong or high correlation means that two or more variables have a strong relationship with each other, while a weak or low correlation means that the variables are handy related. correlation coefficients can range from -1.00 + 1.00. The value of -1.00 represents a perfect negative correlation, while a value of +1.00 represents a perfect positive correlation. A value of 0.00 means that there is no relationship between the variables being tested.

Looking at both regression and correlation analysis, it implies that when you are talking about them, we are talking about relationships between variables. Lucy (2002), asserted that there are many occassions in business when changes in one factor appear to relate in some way to movements in one or several other factors. For example, a marketing manager may observe that sales increases when there has been a change in advertising expenditure. The transport manager may notice that as vans and lorries cover more miles, then the need for maintenance becomes more frequent. In view of that, certain questions may arise in the mind of the manager or analyst. For example could changes in one phenomenon or variation be causing or be caused by movements in the other variable. Regression and correlation analysis help in answering this questions.

Not only that, regression and correlation analysis help business to investigate the determinants of key variables such as their sales. Variations in a companies sales are likely to be related to variation in product prices, consumers incomes, tastes and preference(s), multiple regression analysis can be used to investigate the nature of this relationships and correlation analysis can be used to test the goodness of fit. Regression analysis can also be used to estimate the trends in a short series to make forecast.

Furthermore, correlation analysis is equally a process of determing how different areas of a business relate to each other. This can be useful in making sure that departments are organized

correctly and that personnel are working together efficiently. Correlation analysis can be very useful in forming strategy by knowing how plan affects different areas of the business. It is also useful in implementation as a means to measuring the strategy and success.

1.2 Objectives of the Study

This study is aimed at understanding the impact of regression and correlation analysis in enhancing decision making in an organization. Specifically, the study seek to achieve the following objectives:

1. To identify the effect of regression and correlation analysis on organizational activities
2. To identify how regression and correlation analysis could be veritable tool in making rational decisions.

2.0 REVIEW OF RELATED LITERATURE

Conceptual Framework

The Concept Of Decision Making (Rational And Irrational Decision Making)

Decision making can be regarded as the congnitive process resulting in the selection of a course of action among several alternative scenarios. Every decision making produces a final choice (Reason, 1990). The output can be an action or an opinion choice. Human performance in decision terms has been the subject of active research from several perspectives.

- From a psychological perspective, it is necessary to examine individual decisions in the context of a set of needs, preferences an individual has and values they seek.
- From a cognitive perspective, the decision making process must be regarded as a continous process integrated in the interaction with the environment.
- From a normative perspective, the analysis of individual decisions is concerned with the logic of decision making and rationality and the invariant choice it leads to (Tversky et al, 2000).

Yet at another level, it might be regarded as a problem solving activity which is terminated when a satisfactory solution is reached. Therefore, decision making is a reasoning or emotional process which can be rational or irrational, can be based on explicit assumptions or tacit assumptions. Decisions are likely to be involuntary and following the decision, we spend time analyzing the cost and benefits of that decision (Shadlen et al,2012). This is known as "Rational Choice

Theory," which encompasses the notion that we maximize benefits and minimize the costs (Wenger,2011).

Logical decision making is an important part of all science-based professions, where specialists apply their knowledge in a given area to make informed decisions. For example, medical decision making often involves making a diagnosis and selecting an appropriate treatment. Some research using naturalistic methods shows, however, that in situations with higher time pressure, higher stakes, or increased ambiguities, experts use intuitive decision making rather than structured approaches, following a recognition primed decision approach to fit a set of indicators into the expert's experience and immediately arrive at a satisfactory course of action without weighing alternatives. Recent robust decision analysis, recognized and included uncertainties with a structured and rationaly justifiable method of decision making its conception in 1964.

A major part of decision making involves the analysis of a finite set of alternatives described in terms of evaluative criteria. "Information overload" is when there is a substantial gap between the capacity of information and the ways we adapt. The overload of information can be related to problems processing and tasking, which impacts decsision making (Kumar et al,2007). These criteria may be benefit or cost in nature. Then the problem might be to rank these alternatives in terms of how attractive they are to the decision maker(s) when all the criteria are considered simultaneously. Another goal might be to just find the best alternative or to determine the relative total priority of each alternative (for instance, if alternatives represent projects competing for funds) when all the criteria are considered simultaneously. Solving such problems is the focus of multi-criteria decision analysis (MCDA) also known as multi-criteria decision making (MCDM). This area of decision making, although it is very old and has attracted the interest of many researchers and practitioners, is still highly debated as there are many MCDA/MCDM methods which may yield very different results when they are applied on exactly the same data (Triantaphyllou,2000). This leads to the formation of a decision making paradox.

In economics, it is thought that if humans are rational and free to make own decisions, then they would behave according to the rational choice theory (Wegner,2011). This theory states that people make decisions by determining the likelihood of a potential outcome, the value of the outcome and then multiplying the two. For example, with a 50% chance of winning N2000 or a 10% chance of winning N1000, people more likely to choose the first option. However, in reality, there are some factors that affect decision making abilities and cause people to make

irrational decisions, one of them being availability bias. Avaliability bias is the tendency for some items that are more readily available in memory to be judged as more frequent (Wegner,2011). For example, someone who watches a lot of movies about terrorist attacks may think the frequency of terrorism to be higher than it actually is.

2.3 The Concept Of Correlation Analysis

In layman's terms, correlation exists when two variables have a linear relationship beyond what is expected by chance alone. When examining data in SAS, correlation revelas itself by the relationship between two variables in a data set. The most common measure of correaltion is called the "Pearson Product Moment Correlation Coefficient". It is important to note that while more than two variables can be analyzed when looking for correlation, the correlation measure only applies in two variables at a time by definition (Stockwell,2008). As indicated earlier, the concept of "correlation" is a statistical tool which studies the relationship between two variables and Correlation analysis involves various methods and techniques used for studying and measuring the extent of the relationship between the two variables. "The variables are said to be correlation if the change in one of the variables results in a change in the other variables".

Types of Correlation

There are two important types of correlation. They are (1) Positive and Negative correlation and (2) Linear and Non- Linear correlation.

Positive and Negative Correlation

If the values of the two set variables deviate in the same direction i.e if an increase (or decrease) in the values of one variable results, on an average, in a corresponding increase (or decrease) in the values of the other variable the correlation is said to be positive. Some examples of series of positive correaltion are:

    (1) Heights and Weights;

    (2) Household income and expenditure;

    (3) Price and supply of commodities;

    (4) Amount of rainfall and yield of crops.

Correaltion between two variables is said to be negative or inverse if the variables deviate in opposite direction. that is, if the increase in the variables deviate in opposite direction. That is, if increase (or decrease) in the values of one variable results on an average, in corresponding

decrease (or increase) in the values of other variables. Some example of series of negative correlation are:

 (1) Volume and pressure of perfect gas;

 (2) Current and resistance (keeping the voltage constant) (R=V/1);

 (3) Price and demand of goods.

Linear and Non Linear Correlation

 The correlation between two variables is said to be linear if the change of one unit in one variable results in the corresponding change in the other variable over that entire range of values. For example consider the following data

| X | 2 | 4 | 6 | 8 | 10 |
| y | 7 | 13 | 19 | 25 | 31 |

Thus, for a unit change in the value of X, there is a constant change in the corresponding values of Y. In general two variables X and Y are said to be linearly related, if there exists a relationship of the form Y=a+bx, where a and b are real numbers. Such relations generally occur in physical sciences but rarely encountered in economic and social sciences. The relationship between two variables is said to be non-linear if corresponding to a unit in one variable, the other variable does not change at a constant rate but changes at a fluctuating rate. In such cases, if the data is plotted on a graph sheet, we will not get a straight line curve.

Uses of Correlation Analysis

  Lutzenberg (2007), said that a correlation is fundamentally, a comparism between two or more things. If you compare the performance of two employees, you may find a correlation in that their performance increases when both are working on the same shift. In a simplest form, a correlation identifies a correction between two elements when the change status. Correlations are scored in three- number format with -1 as no correction, 0 for some kind of influence and 1 for true strong connection.

Projection Tools

The most valuable use of a correlation is in predicting the future of a business direction. If marketers and sales people can identify a correlation between the behaviour of consumers and events and a particular type of product or service, they can take advantage of the relationship to boast business and ultimately profits.

Direction Change

Just because a correlation is found does not mean it's always a good thing for a business. Sometimes correlations works inversily. For instance, if inflation rises and job losses go up in a market, a business can see fewer sales on their product because of lower consumer purchasing. This shrinkage or opposite direction from the first factor is an inverse correlation which a business would want to anticipate and avoid.

Performance Measurement

Correlation in how production processses in a business currently operate, can also lead to identifying efficiencies that save money. If patterns show that use of a particular material drives up costs of production, the correlation can lead management to try and identify substitutes supplies that lower manufacturing cost. The same goes for employee performance picks up with the implementation of a bonus-pay firm improvement system, the correlation of behaviour can signal that a small bonus expense can make serious production improvement.

Data Mining and Pattern

With the widespread use of computers in modern business, significant amounts of data and files exist in many businesses and comparism have found out that sorting this information can identify patterns otherwise not visible in folders or isolated in operation silos of business functions. By looking for data relatioships and correlations or data-mining, a business have found they can leverage existing information for better management customer relation and improved operation.

2.4 Regression Analysis

Regression analysis, in general sense, means the estimation or prediction of the unknown value of one variable from the known value of the other variable. It is one of the most important statistical tools which is extensively used in almost science- Natural and Physical. It is specially used in business and economics to study the relationship between two or more variables that are related causally and for the estimation of demand and supply graphs, cost functions, production and consumption functions and so on.

Prediction or estimation is one of the major problems in almost all the spheres of human activity. The estimation or prediction of future production, consumption, prices, investments, sales, profits, income etc. are of very great importance to business professionals. Similarly, population estimates and projections, GNP, Revenue and Expenditure etc, are indispensable for economists and efficient planning of an economy.

Regression analysis was explained by M.M Blair as follows: "Regression analysis is a mathematical measure of the average relationship between two or more variables in terms of the original units of the data. Soppose we have a sample of size 'n' and it has two sets of measures, denoted by x and y. We can predict the values of 'y' given the value of 'x' by using the equation, called the Regression Equation. Y=a+bx.

Types of regression: There are four types of regression models, they are simple linear regression, multiple regression, linear regression, and non- linear regression.

Simple linear regression

Simple linear regression intels establishing a relationship between selected and observed values which are constructed so that there is a more probable value of an observed value which can be predicted from the values of a selected variable. This is variables that are observed are that of x (selected variable) and y (observed variable). An independent variable is what the selected variable is essentially called as well as being a predictor, the carrier, or even the input per se. Then again, when we talk about the observed value/dependent variable, which is then seen as being the output or the response. Let us take example company Z in cold beverage production, if we look at the company Z and its sales regarding cold beverages which are seen as being dependent upon its marketing budget, the bigger the budget for marketing is, it will translate into a bigger increase of sales for the cold beverages. When looking at it from a regression standpoint, it would make for the sales being a regression on the marketing budget (Rliasoft Corp.,2008).

Multiple regression: multiple regression is where relationship depends on two or more variables that are dependent of each other. Then the value that is observed is made so that the most detrimental value of the observed value will be thought of from the values that were of the selected variables. With this analysis in which there are numerous variables which have an influence on a dependent variable, it takes a multiple regression of the form of y=b(1)x(1)xb(2)x(2)+...+b(n)x(n)+c. To elaborate on this further, if we look at c, it is a constant per se. Then as far as the b, it makes for the coefficient of regression which stands for the amount in which the variable y changes when it matches an independent variable and it changes as a result of 1. A multiple correlation coefficient is what represents the variance percentage in the dependent variable that explains all of the collective variables. This is seen as being R sqaured. As in the example of Z bevearge company above, if Z company, makes a conclusive decision

that the sales of cold beverages actually depends on the actual marketing budget, then the amount of distributors that will be appointed will in essence have to look at the beverages actual prices and the different types as well. From a multiple regression standpoint, a number of assumptions can be made which will most likely say that there is a correlation and linearity of the item in question. It will also look at the similarity throughout the independent variables ranges and its complete data range with the absence of any outliers (Palmer,2008). From the linear regression perspective, this process looks at a straight line which focuses on a set of data which will look for future outcomes. This straight line is in fact used to determine what effect an independent variable has on a specific variable. In saying this, the relationship of variables from a linear standpint we can say when it comes to company Z, we can figure out the relationship between the sales of cold beverages and the marketing budget, we could say that there are variables (which are x and y) and the linear regression attempts to make for this relationship fit on a straight line to actually fit certain data. With this regression model, it is said that $y=a+bx+c$. The c is infact labeled as being a residual number.

Non linear regression model

Non linear regression model is basically the relationship of more than one selected variable and observed variable in a non-linear way. This model is seen as when model $y=f(x,t)+e$ in which it is multi-dimensionally applied to x and y data where the f is considered non-linear with not being able to detect the parameters (which are seen as t).

The Advantages of Regression Analysis and Forecasting

The daily challanges of running a small business can be daunting enough without trying to predict the future, but managers and owners must keep an eye on the future while operating their companies. Regression analysis, a statistical analysis technique used by economics and business researchers, helps managers and business owners forecast future conditions, lend quantitative support to managers judgement, point out flaws in management thinking and provide new insights that can help company decision makers move their businesses toward a more profitable future (Hall,2008).

some of the advantages of regression analysis are as follows:

Predicting the Future

One of the primary advantages of regression-based focasting techniques is that they use research and analysis to predict what is likely to happen in the next quarter, year or even farther into the

future, A.H Studenmund, author of "using Economics." For small-business owners, said regression-based forecasting can provide insight into how higher taxes, changes in consumer spending or shifts in the local economy, for example, will affect their companies.

Supporting Decisions

Businesses large and small are awash in data on finances, operations and customer purchases. Increasingly, managers that once relied on their experience and intuition look to data and analysis to inform business decisions. Regression and forecasting techniques can lend a scientific angle to management of small businesses, reducing large amounts of raw data to actionable information. In some instances, the analysis will support a manager's gut feeling. For example, a manager who believes expanding into a new facility will increase customer traffic and sales may support in a regression model that finds a correlation between facility size and company revenues.

Risk Analysis for investment

The capital asset pricing model was developed using linear regression analysis and a common measure of the volatility of a stock investment is its beta-which is determined using linear regression. Linear regression and its use is key in assessing the risk associated with most investment vehicles (Keener,2009).

Sales or Market Forcast

Multivariate (having more than two variable) linear regression is a sophiscated method for forecating sales volumes or market movement to create comprehensive plans for growth. This method is more accurate than trend analysis as trend analysis only looks at how one variable changes with respect to anaother, where this method looks at how one variable will change when several other variables are modified.

Correcting Errors

Although forecasting and regression can lend empirical support to management intuition, these techniques also can correct management thinking when evidence indicates otherwise. For example, a retail store manager may believe that extending shooping hours will greatly increase sales. A regression analysis, however, may demostrate that longer hours do not significantly increase sales enough to justify the increased operating costs, such as additional employee labor. Just as regression can provide quantitative support for decisions, it also can show where a small business operator's intuition is mistaken.

Total Quality Control

Quality control methods make frequent use of linear regression to analyze key product specifications and other measureable parameters of product or organization quality(such as number of customer complaints and time etc).

New Insights

Large data sets have potential to yield valuable new information about small businesses and their operations. However, the data do not speak for themselves, making analysis necessary. Regression and forecasting techniques can yield new insight for managers by uncovering patterns and relationships that they had not previously noticed or considered. For example, analysis of sales and purchase data may reveal particular purchasing patterns on certain days of the week or at certain times of the year. This insights can signal a need to ensure these products are in sufficient supply for these high-demand periods (Hall, 2008).

Linear regression in human resources

Linear regression methods are used to predict the demographies and type of future work force for large companies. This helps the companies to prepare for the needs of the work force through development of good hiring plans and traning plans for the existing employees.

2.5 The Similarities between correlation and regression

Correlation analysis seeks to establish whether or not two variables are correlated. That is to say whether an increase in one is accompanied by either an increase (or decrease) in the other most of the time. It is a measure of the degree to which they change together. Regression analysis goes further and seeks to measure the extent of the change. Using statistical techniques, a regression line is the best measure of how changes in one variable affect the other variables. Although, the first of these variables is frequently called an independent or even explanatory variable, and the second is called a dependent variable. The existence of regression does not imply a causal relationship.

Difference between correlation and regression analysis

In linear correlation analysis, we identify the strength and direction of a linear relation between two random variables. Correlation does not imply causation.

Regression analysis takes the analysis one step further to fit an equation to the data. One or more variables are considered independent variables (x1, x2,.....xn) responsible for the dependent or response variable or y variable.

2.6 Importance of correlation and regression analysis

Correaltion and regression analysis can help business to investigate the determinants of key variables such as their sales. Variation in a company sales are likely to be related to variation in product prices, consumer incomes, tastes and preferences. Multiple regression analysis can be used to investigate the nature of this relationship and correlation analysis can be used to test the goodness of fit. Regression can also be used to estimate the trend in a time series to make forecast. Correlation analysis is the process of determining how different areas of a business relate to each other. This can be useful in making sure that departments are organized correctly and that personnel are working together efficiently. Correlation analysis can be very useful in forming strategy by knowing how the plan affects different areas of business. It is also useful in implementation as a means to measuring the strategy of success.

2.2 THEORETICAL FRAMEWORK

The Rational Comprehensive Model

The rational comprehensive model is based on the reasoning of eceonomists, mathematicians, psychologists. It assumes that the decision maker can identify the problem, that the decision maker's goals, values, and objectives are clear and ranked in accord with their importance, that alternative ways of addressing the problem are considered, that the cost and benefits or advantages and disadvantages of each alternative are investigated, that alternatives and their consequences can be compared with other alternatives, and that the decision maker will choose the alternative that maximizes the attainment of his or her goals, values, and objectives. However, problems are always clearly defined; problems have to be formulated in a way which enables people to make decisions about them. Decision makers must have vast amounts of information in order to make use of the rational comprehensive decision-making technique. There needs to be an ability to predict the future consequences of decisions made. Also, problems confronting decision makers often embody conflicting values. In addition, it is tough to ignore the sunk costs of former decisions, these may foreclose many alternatives. Moreover, this

model of decision making assumes that there is one (unitary) decision maker, when in fact a great many people, interest and institutions are usually involved (Monaham, 2000).

The Incremental Theory

Attempts to correct deficiences of the rational comprehensive model and to better describe how policy decision makers actually behave resulted in incremantal theory. Incremental theory holds that the selection of goals and objectives is interwined with, not distinct from, the scientific analysis of the problem. Decison makers only consider alternatives for dealing with a problem that differs marginally (incrementally) from existing policies (suggesting that they do not completely remake policy every time they make a policy decision, but instead refashion existing policy). For each alternative, only important consequences are considered. Problems confronting the decision maker are continually redefined. Constant ends- means and, means-ends adjustments are made to better manage policy. Seldom are there ever single decisions or totally correct solutions available to resolve a problem. A good decision is one that the policy makers can agree on, not one that may be most appropriate for an agreed objective. Incremental decision making is remedial, not holisticly-devised or future-oriented. Rarely are decisions faced in all or nothing term (Monaham,2000)

2.3 EMPIRICAL REVIEW

The Use Of Regression And Correlation Analysis In Decision Making

Empirical research on the use of regression and correlation analysis in decision making are now encountered in all kinds of scientific research and methodologies and no longer limited to physical phenomena. In his study of linear relationship between variables,Kalla (2008) in his research came up that the force of gravity between the earth and an object is linear in nature. If the mass of the object doubles, the force of gravity acting on it will also be double. This indicate that an understanding of linear relationships is essential to understand these relationships between variables. He concluded that linear relationships are not limited to physical phenomena but are frequently encountered in all kinds of scientific research and methodologies.

Pidwirny (2006), in his study on how regression and correlation analysis are statistical techniques used extensively in physical geograpy to examine causal relationship between variables, suggested from his findings that the amount of water received on a field during growing season will inflence the yield of cucumbas growing on it. He concluded that the value

of both the dependent and independent variables are assumed as being ascertained in an error and free random manner. The researcher used randomly collected data on growing season precipitation and cucumber to proof that.

Heydari et al (2013) in their study, correlation and regression analysis of drinking water in Kashan city Iran, came up with their findings that the systematic calculations of correlation coefficient between water parameters and regression analysis provide useful mean for rapid monitoring of water quality. According to them, water is an elixir of life, an important component of human survival. Therefore, the physical and chemical parameters of water play a significant role in classifying and assessing water quality.

Furthermore, correlation and regression analysis can also be used in hospital management. Bewick et al in their study, came up with a result that correlation and regression could be used to determine whether there is a relationship between age and Urea level, and whether the level of Urea can be predicted for a given age.

3.0 Methodology

In this study, we made use of case study design with Seven up bottling company Nite Mile as case study for our analysis. Primary method of data gathering like observational techniques, and intensive/unstructured interview were adopted in gathering all relevant information relating to the subject under consideration.

4.0 FINDINGS

1. Regression and correlation analysis help businesses to investigate the determinants of key variables in taking decision.

2. Regression analysis can also be used to estimate the trends in a short series to make forecast.

3. Correlation analysis is equally a process of determining how different areas of a business relate to each other. This can be useful in making sure that departments are organized correctly and that personnel are working together effectively.

4. Correlation can be very useful in forming strategy by knowing how plan affects different areas of business.

5. It is also useful in implementation as a means of measuring strategy and success.

6. Furthermore, Regression helps managers and business owners forecast future conditions, lend quantitative support to managers judgement, point out flaws in management thinking and provide new insights that can help company decision makers move their businesses toward a more profitable future.

5.0 CONCLUSION

Decision making is the mental process resulting in the selection of a course of action among several alternatives scenario. It is a reasoning or emotional process that can be rational or Irrational. As indicated earlier, decision making is a prime responsibility of every manager in a business organization and taking decision based on intuintive approach may be harmful and detrimental to the progress of the organization. Therefore, decision making should be based on scienctific approach.

6.0 RECOMMENDATIONS

In view of the above, regression and correlation quantitative approach decision making is hereby recommended for every business organization. Not only that regression and correlation analysis can be a very useful strategy in formulating strategies by knowing how plan affects different areas of business, it is also useful in implementation of decision as a means of measuring the strategy success. Furthermore, it helps managers and business owners forecast future conditions, lend quantitative support to managers judgement, put out flaws in management thinking and provide new insights that can help company decision makers move their business towards a more profitable future.

Again, regression and correlation analysis being basics for business analysis. It is equally recommended that every business organization, especially those in the food and beverage industries should intensify efforts in adopting regression and correlation analysis in decision making because, not only it will enhance the company's decision making process, but following its forecating and budgetary processes will improve the company's profitability through increased sales and performance improvement interms of shareholders wealth.

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