

# Regression analysis research paper examples

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Regression analysis is a statistical technique employed in research when attempting to identify the relation between different variables. In theory, several factors have a significant influence on the outcome of events. However, statistics has established that there exist linkages and relationship between different variables that eventually determine the outcome. Thus investigation is usually directed on seeking the impact of one variable on the other. For instance economists use such analysis when determining the effect on price increase on demand. Thus researchers collect data on the underlying variables of interest and use regression analysis to determine the quantitative effect of causal variable that impacts the outcome. However, regression analysis also requires that the researcher declares the extent to which these variables affect outcome . In general, a term referred to as confidence level determines the extent to which the researcher is certain that the variables have significant effect.

## **Regression models**

Regression analysis employs a mathematical model that describes the relation between the variables. These models require that one variable be defined and constant. This determined and constant variable is referred to as the independent variable and impacts the other to a certain level. The other variable is referred to as the dependent variable and is the point of interest for the researchers. Finally the mathematical relation is completed by the unknown parameter. The resulting mathematical model is  $Y = F(X, B)$ , where, Y is the dependent variable, X is the independent variable and B is the unknown parameter. This expression defines that the outcome of variable Y

which is dependent on variable X with the proportion determined by parameter B.

### **Possible case**

Regression analysis can be used in several cases of research and analysis.

Assume that we are to determine and identify factors that determine the price of crude oil in the world market. Economics has it that the price of crude oil is determined by several factors. These factors are quite a number and include demand, supply, population income levels, production cost, shipment costs, interest rates, inflation and government regulation. Allen (2004), argues that factors that determine prices of oil are almost limitless and each of these factors affects the prices of the commodity with varying level of significance. However, some regression analysis techniques such as simple regression analysis require that a research identify a definite number of variables for review .

For a case of determining factors that affect oil prices in the markets, economists have developed simple regression analysis. Prices of crude in the world market are affected, to higher of significances, by the production costs, supply and demand. In this case, the dependent variable is the price of crude oil. On the other hand, independent variables include the production cost, demand and supply. According to Allen (2004), a researcher is to gather data with regard to the above factors in order to ascertain the quantitative effect of each factor. For instance, production cost can be ascertained with a higher degree of certainty just as the supply of the commodity. However, it is quite difficult to ascertain, to a high degree of certainty, the demand in the market. It is at this point the researcher would

declare the confidence level of the research due to possible assumptions that may be employed during the research. After having the variables together, researchers now attempt to find the link in between these variables and their impacts on oil prices.

## **Conclusion**

Regression analysis is used in research to evaluate the impacts of one variable on another variable. To this end, it is possible to provide predictions and forecasts on future events in order mitigate changes. Regression analysis is a mathematical model that guides researcher in providing such predictions.

## **Reference**

Allen, M. P. (2004). *Understanding Regression Analysis*. Boston : Springer Science & Business.

Berk, R. A. (2004). *Regression Analysis: A Constructive Critique*. New Jersey: SAGE.