

Applied decision methods class; mod4; regression models discussion

[Business](#)



Regression Models discussion Multiple regression analysis is a sophisticated process for projecting market movement or sales volumes to create all-inclusive growth plans. This method is more accurate since it looks at how the modification of two or more variables will affect one variable. Multiple regression analysis is used in day-to-day business decision making and in resolving important predicaments facing businesses. A good example is when Coca cola wants to evaluate the factors perceived to influence the demand for its products. In this scenario;

Dependent variable: sales (units/ week)

Independent variables: Advertising (\$100's) and Price (in \$)

The sales model will be; $\text{sales} = b_0 + b_1 (\text{advertising}) + b_2 (\text{price})$

The estimated coefficients can then be interpreted and the sales correlation matrix for Advertising vs. Sales, and Price vs. Sales determined. Using computer software or excel, the coefficients can be generated and measures of goodness of fit determined hence assisting in drawing the scatter diagrams.

Render et al. asserts that assessing the plots (measured and calculated values of the dependent variable) and can be used to determine the quality of the model (pg. 127). For a good and apposite model, the trends should not be very dissimilar, and if the difference between measured and calculated points is huge, an ostensible trend should exist. What's more, in the residual plot, the residual values of the dependent variable should be arbitrarily scattered around the line $\text{err} = 0$ and the mean should be zero (normality). For the model to be statistically valid and stable, the confidence intervals to be used should be significantly small. An awkward model yields inaccurate

derivative values and impractical results for even smallest extrapolations. Additionally, for an appropriate model, the errors should have a constant variance that expedites the analysis.

Work cited

Render, Barry, and Ralph M. Stair. Quantitative Analysis for Management. Saint Leo University (Ed.) GBA334: 2013. Print