

Significance of regression model and independent variables essays example

[Business](#), [Company](#)



One of the most commonly used tools used by businesspeople today is the regression model. With this statistical technique, a marketer can easily evaluate if a company's promotional efforts effectively translate into high sales. Aside from that, the regression model can allow a firm to make predictions about the direction of its operation given certain independent and dependent variables (e. g. advertising to sales, volume discounts to profits, press releases to company image).

Although the regression model proves to be very helpful when it comes to deciding the next strategic move that a business unit should take on, this method can be sometimes laced with doubt. Oftentimes, the marketer will hold reservations with the results especially when it comes to independent variables. As we all know, inconsistency can happen in the relationship between the dependent and independent variables. For example, a particular independent variable holds true in Region A but becomes irrelevant in Regions B and C. As this variation becomes a problem with the formulation of new marketing strategies, the analyst should look into various ways to better interpret such (and other similar) statistical results in a regression model.

There are certain indicators to prove the significance of the independent variables in a particular regression analysis. First of all, the marketer should carefully study the existing prediction equation. Does it create a reasonable estimate of the correlation between the variables? Is the regression constant even with the introduction of Boolean and other dummy variables? Or will the outcome shift from the original estimate?

Another thing to take a serious look into is the standard error. If the marketer wants to evaluate the reliability of the outcomes of the

independent variables, he/she should assess the standard errors of the coefficients, which has the formula:

$$s = \sqrt{\frac{\sum (e_i)^2 / (n-2)}{\sum (x_i - \bar{x})^2}}$$

Once this has been calculated, the marketer can now evaluate the success or failure of the set independent variables.

Other important indicators that help determine the significance of independent variables are the t-ratios and the beta-weights. T-ratios allow the analyst to strongly see the relevance of independent variables after all of the variables have been considered. Beta-weights of independent variables, on the other hand, will provide a good explanation why dependent variables vary across the regression model.