

Regression analysis models for marketing decision making

[Science](#), [Statistics](#)



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Synopsis

Introduction

Decision-making is the core of business, and correct decisions result into businesses thriving. Marketing decisions in a company are made based on information that is as a result of data interpretation or analysis. Analysis of quantitative data which is mainly measurable is done through several statistical models. The research seeks to identify various regression analysis models being applied by businesses in trying to get information from quantitative data and the information being used in making a business decision especially in the marketing department.

Regression Definition

Regression analysis is a statistical technique that determines linear relationships between two or more variables. Businesses mainly use regression as a causal inference and for predictions. The major regression models available are linear regression model, non-linear regression model, logistic regression and multinomial logistic regression. Simple regression models use only two variables to achieve a particular statistical result.

Multiple linear regression is a regression that applies more than two variables.

Logistic regression procedures in quantitative statistics will produce all predictions, residuals and influence statistics. Logistic regression also produces goodness-of-fit tests using sales and marketing data in the case where it has to make predictions for the marketing department. The goodness-of-fit tests are created at the individual case level, and this is

regardless of methods of data insertion and whether or not the number of covariate patterns is lesser than the total number of instances in question. On the other hand, multinomial logistic regression procedure aggregates all cases internally to form subpopulations with identical covariate patterns for the predictors, residuals, and goodness-of-tests.

Non-linear regression is a quantitative statistical method of finding a nonlinear model of the relationship between the dependent variable and a set of several independent variables. Current non-linear models can be used to estimate models with arbitrary relationships between dependent and independent variables. Iterative estimation is mostly used to achieve non-linear regression.

Problem Statement

Predicting future marketing trends in business is an essential requirement for the management if they have to beat the competition. This is because a lot of the data is available for use by business nowadays due to advancements in technology like the web that collects a lot of statistical data for analysis. The primary problem facing businesses is identifying the optimal data analysis model to use in the analysis of the quantitative data and getting valid information for predicting the future marketing trends.

Objectives and Aims

The research seeks to define and identify the optimal regression analysis models available today. The paper will describe several procedures available in using the regression models to perform data analysis. The paper will then simulate some marketing data to identify the best regression that a business can employ within various marketing situations. The paper will consider and

determine all the assumptions that businesses are allowed to apply in using the regression models. The paper will suggest the optimal or the best regression model that a mid-sized business entity can apply depending on the several amount of data and variable they can acquire. Finally, the paper will suggest and analyze how several software application like SPSS can be used in using the optimal regression model identified in the research.

Challenges

The research will mostly use on-line articles in studying the various regression models based on previously published research without the use of actual sample data in testing the regression models. Acquiring statistical software application will also become a challenge due to most of them being commercially available.

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