

PREDICTIVE MULTIPLE REGRESSION MODEL Harvard Case Solution & Analysis

Predictive Modeling

Predictive modeling is a process that uses **data mining** and **probability** to forecast outcomes. Each model is made up of a number of predictors, which are variables that are likely to influence future results. Once data has been collected for relevant predictors, a statistical model is formulated. The model may be a simple linear equation or it may be a complex neural network, mapped out by sophisticated software. As more data becomes available, the **statistical analysis** model is validated or revised for a more accurate model.

Data Mining

Data mining is the process of sifting through large data sets. The data is sorted to find patterns and connections to find a solution to a problem.

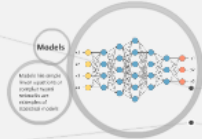
Probability

Probability is a branch of mathematics that calculates the likelihood of a given event occurring.

A common example to show probability is picking a red marble from a bag with 5 red, 8 green, and 2 yellow marbles.

Statistical Analysis

The goal of statistical analysis is to identify trends and scrutinize every data set. The five steps of statistical analysis are: describe the feature of the data, explore the relation of the data, create a model of how the data relates, prove the validity of the model, and then use predictive analysis to run scenarios.



Books

Books related to predictive modeling and data analysis.

Videos

Journal Articles

Academic articles related to predictive modeling and data analysis.

Logistic Regression

Logistic Regression is a statistical method used to predict a categorical variable based on a set of independent variables.

Predictive Modeling is used in several jobs. It is used in healthcare to relate past information with drug sales. It is also used in archeology as a decision-making tool in cultural resource management.

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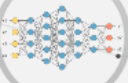
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Statistical Analysis

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Models

Models identify how a system of complex things interacts and respond to external forces.




Books

Business Analytics: The Art of Analyzing Data to Improve Decision Making

Statistical Inference: Theory and Applications



Videos



Journal Articles

Roberts, S., DeMaio, J., & Brown, C. (2017). Predictive Modeling in Public Health: A Review of the Literature. *Public Health Reports*, 132(2), 100-110.

Wang, L., & Chen, J. (2019). Predictive Modeling in Public Health: A Review of the Literature. *Public Health Reports*, 134(2), 100-110.

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Logistic Regression

Logistic Regression is a statistical analysis method that is used to predict a data value using prior observations. Logistic regression model depicts the dependent variable by analyzing the relationship between previous independent variables.



Models