

Handbook of Regression Modeling in People Analytics

People analytics is a field that uses data and statistical techniques to improve the management of people in organizations. Regression modeling is a powerful tool that can be used to analyze relationships between variables and make predictions. This handbook provides a comprehensive overview of regression modeling in people analytics, including:

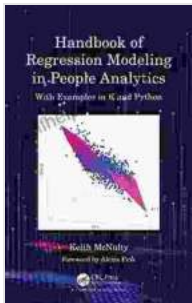
- The different types of regression models
- The assumptions of regression modeling
- How to interpret regression results
- How to use regression modeling to inform decision-making

The most common type of regression model is the linear regression model. This model assumes that the relationship between the dependent variable and the independent variables is linear. Other types of regression models include:

- **Logistic regression:** This model is used to predict the probability of an event occurring.
- **Poisson regression:** This model is used to predict the number of events that will occur.
- **Negative binomial regression:** This model is used to predict the number of events that will occur, taking into account the overdispersion of the data.

- **Multinomial regression:** This model is used to predict the probability of a categorical variable taking on one of several possible values.

The assumptions of regression modeling are important to consider because they can affect the validity of the results. The assumptions of linear regression are:



Handbook of Regression Modeling in People Analytics: With Examples in R and Python by Keith McNulty

★ ★ ★ ★ ★ 5 out of 5
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- **Linearity:** The relationship between the dependent variable and the independent variables is linear.
- **Independence:** The observations are independent of each other.
- **Homoscedasticity:** The variance of the residuals is constant.
- **Normally distributed errors:** The errors are normally distributed.

The results of a regression model can be interpreted to:

- **Identify the relationship between the dependent variable and the independent variables:** The coefficients of the independent variables in the regression model indicate the direction and strength of the relationship between the variables.

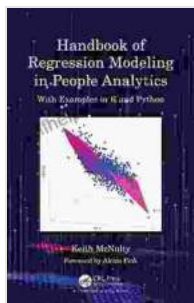
- **Predict the value of the dependent variable:** The regression model can be used to predict the value of the dependent variable for a given set of values of the independent variables.
- **Evaluate the fit of the model:** The R-squared value of the regression model indicates how well the model fits the data.

Regression modeling can be used to inform decision-making in a variety of ways. For example, regression modeling can be used to:

- **Identify the factors that influence job performance:** Regression modeling can be used to identify the factors that influence job performance, such as education, experience, and training. This information can be used to make decisions about hiring, promotion, and training.
- **Predict turnover:** Regression modeling can be used to predict the probability of an employee leaving the organization. This information can be used to make decisions about retention strategies.
- **Evaluate the effectiveness of HR programs:** Regression modeling can be used to evaluate the effectiveness of HR programs, such as training programs and employee assistance programs. This information can be used to make decisions about continuing or discontinuing the programs.

Regression modeling is a powerful tool that can be used to improve the management of people in organizations. This handbook provides a comprehensive overview of regression modeling in people analytics, including the different types of regression models, the assumptions of

regression modeling, how to interpret regression results, and how to use regression modeling to inform decision-making.



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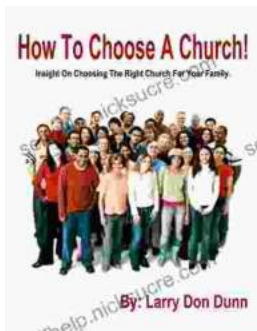
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