

Applied Logistic Regression

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Course Outline

1 Introduction to the Logistic Regression Model

- 1.1 Introduction
- 1.2 Fitting the Logistic Regression Model
- 1.3 Testing for the Significance of the Coefficients
- 1.4 Confidence Interval Estimation
- 1.5 Other Methods of Estimation,

2 Multiple Logistic Regression

- 2.1 Introduction
- 2.2 The Multiple Logistic Regression Model
- 2.3 Fitting the Multiple Logistic Regression Model
- 2.4 Testing for the Significance of the Model
- 2.5 Confidence Interval Estimation
- 2.6 Other Methods of Estimation

3 Interpretation of the Fitted Logistic Regression Model

- 3.1 Introduction
- 3.2 Dichotomous Independent Variable
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- 3.4 Continuous Independent Variable

4 Model-Building Strategies and Methods for Logistic Regression

- 4.1 Introduction
- 4.2 Variable Selection
- 4.5 Numerical Problems

5 Assessing the Fit of the Model

- 5.1 Introduction
- 5.2 Summary Measures of Goodness-of-Fit
 - 5.2.1 Pearson Chi-Square Statistic and Deviance
 - 5.2.2 The Hosmer-Lemeshow Tests
 - 5.2.3 Classification Tables
 - 5.2.4 Area Under the ROC Curve
 - 5.2.5 Other Summary Measures
- 5.3 Interpretation and Presentation of Results from a Fitted Logistic Regression Model

6 The Multinomial Logistic Regression Model

- 6.1 Introduction to the Model and Estimation of the Parameters
- 6.2 Interpreting and Assessing the Significance of the Estimated Coefficients
- 6.3 Model-Building Strategies for Multinomial Logistic Regression

7. Ordinal Logistic Regression Models

- 7.1 Introduction to the Models, Methods for Fitting
- 7.2 Interpretation of Model Parameters
- 7.3 Model Building Strategies for Ordinal Logistic Regression Models

References:

Hosmer, D.W. and Lemeshow, S. (2000) *Applied Logistic Regression: Second Edition*, John Wiley & Sons Inc., New York.

Also, The course booklet