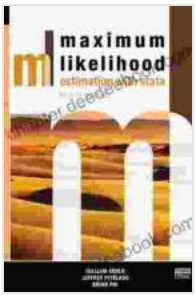
Maximum Likelihood Estimation With Stata Fourth Edition: A Comprehensive Guide

$$L(\theta | x) = P(x | \theta)$$

where:

- $L(\theta | x)$ is the likelihood function
- θ is the vector of parameters to be estimated
- x is the observed data

The MLE estimator is the value of θ that maximizes the likelihood function:



Maximum Likelihood Estimation with Stata, Fourth Edition by William Gould

4.9 out of 5

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Text-to-Speech	: Enabled
Screen Reader	: Supported
Enhanced typesetting	: Enabled
Print length	: 582 pages

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$$\hat{\theta}= \arg\max_{\theta}L(\theta | x)$$

The MLE estimator is asymptotically consistent, efficient, and normally distributed under certain regularity conditions.

Stata provides several commands for performing maximum likelihood estimation. The most commonly used command is mlogit, which can be used to fit a variety of models, including linear regression models, logistic regression models, and probit regression models.

To fit a maximum likelihood model in Stata, you can use the following syntax:

stata mlogit depvar indepvars [if] [in] [weight] [, options]

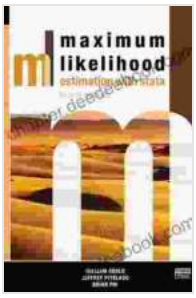
where:

- `depvar` is the dependent variable
- `indepvars` are the independent variables
- `if` and `in` are optional clauses that can be used to select observations and variables, respectively
- `weight` is an optional variable that can be used to weight observations
- `options` are a variety of options that can be used to control the estimation process

For example, the following command fits a linear regression model with maximum likelihood estimation:

stata mlogit y x1 x2 x3

The output from the <code>mlogit</code> command includes the estimat



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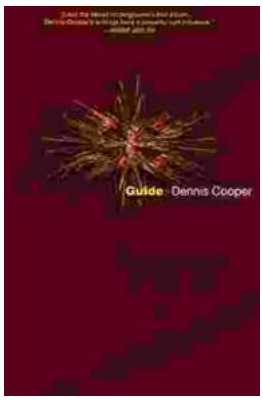

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