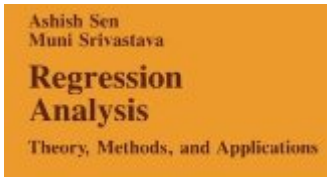
1. Textbook

Regression Analysis

Theory, Methods, and Applications

Authors: Ashish Sen, Muni Srivastava

ISBN: 978-1-4612-8789-6 (Print) 978-1-4612-4470-7 (Online)



2. Chapters Covered

1 Introduction

2 Multiple Regression

3 Tests and Confidence Regions

4 Indicator Variables

5 The Normality Assumption

6 Unequal Variances

8 Outliers and Influential Observations

10 Multicollinearity

3. References

A.1 Addition and Multiplication.- A.2 The Transpose of a Matrix.- A.3 Null and Identity Matrices.- A.4 Vectors.- A.5 Rank of a Matrix.- A.6 Trace of a Matrix.- A.7 Partitioned Matrices.- A.8 Determinants.- A.9 Inverses.- A.10 Characteristic Roots and Vectors.- A.11 Idempotent Matrices.- A.12 The Generalized Inverse.- A.13 Quadratic Forms.- A.14 Vector Spaces.- Problems.- B Random Variables and Random Vectors.- B.1 Random Variables.- B.1.1 Independent Random Variables.- B.1.2 Correlated Random Variables.- B.1.3 Sample Statistics.- B.1.4 Linear Combinations of Random Variables.- B.2 Random Vectors.- B.3 The Multivariate Normal Distribution.- B.4 The Chi-Square Distributions.- B.5 The F and t Distributions.- B.6 Jacobian of Transformations.- B.7 Multiple Correlation.- Problems.- C Nonlinear Least Squares.- C.1 Gauss-Newton Type Algorithms.- C.1.1 The Gauss-Newton Procedure.- C.1.2 Step Halving.- C.1.3 Starting Values and Derivatives.- C.1.4 Marquardt Procedure.- C.2 Some Other Algorithms.- C.2.1 Steepest Descent Method.- C.2.2 Quasi-Newton Algorithms.- C.2.3 The Simplex Method.- C.2.4 Weighting.- C.3 Pitfalls.- C.4 Bias, Confidence Regions and Measures of Fit.- C.5 Examples.- Problems.- Tables.- References.- Author Index.