

Updated for  
Version 9

*A Handbook of*  
**Statistical**  
**Analyses**  
*Using* **Stata**

*Fourth Edition*

Sophia Rabe-Hesketh  
Brian S. Everitt



Chapman & Hall/CRC  
Taylor & Francis Group

---

# Contents

---

<b>1 A Brief Introduction to Stata.....</b>	<b>1</b>
1.1 Getting help and information	1
1.2 Running Stata	2
1.3 Conventions used in this book	9
1.4 Datasets in Stata	9
1.5 Stata commands	13
1.6 Data management	19
1.7 Estimation	22
1.8 Graphics	24
1.9 Stata as a calculator	30
1.10 Matrix calculations using Mata	32
1.11 Brief introduction to programming	34
1.12 Keeping Stata up to date	39
1.13 Exercises	40
<b>2 Data Description and Simple Inference: Female Psychiatric Patients.....</b>	<b>43</b>
2.1 Description of data	43
2.2 Group comparison and correlations	46
2.3 Analysis using Stata	47
2.4 Exercises	57
<b>3 Multiple Regression: Determinants of Pollution in U.S. Cities .....</b>	<b>61</b>
3.1 Description of data	61
3.2 The multiple regression model	63
3.3 Analysis using Stata	64
3.4 Exercises	82

<b>4 Analysis of Variance I: Treating Hypertension .....</b>	<b>85</b>
4.1 Description of data	85
4.2 Analysis of variance model	85
4.3 Analysis using Stata	87
4.4 Exercises	96
<b>5 Analysis of Variance II: Effectiveness of Slimming Clinics .....</b>	<b>101</b>
5.1 Description of data	101
5.2 Analysis of variance model	102
5.3 Analysis using Stata	104
5.4 Exercises	108
<b>6 Logistic Regression: Treatment of Lung Cancer and Diagnosis of Heart Attacks .....</b>	<b>111</b>
6.1 Description of data	111
6.2 The logistic regression model	112
6.3 Analysis using Stata	116
6.4 Exercises	129
<b>7 Generalized Linear Models: Australian School Children .....</b>	<b>133</b>
7.1 Description of data	133
7.2 Generalized linear models	134
7.3 Analysis using Stata	139
7.4 Exercises	153
<b>8 Summary Measure Analysis of Longitudinal Data: Treatment of Post-Natal Depression.....</b>	<b>157</b>
8.1 Description of data	157
8.2 The analysis of longitudinal data	159
8.3 Analysis using Stata	159
8.4 Exercises	170
<b>9 Random Effects Models: Thought Disorder and Schizophrenia .....</b>	<b>173</b>
9.1 Description of data	173
9.2 Random effects models	173
9.3 Analysis using Stata	178
9.4 Thought disorder data	190
9.5 Exercises	199
<b>10 Generalized Estimating Equations: Epileptic Seizures and Chemotherapy .....</b>	<b>201</b>
10.1 Description of data	201

10.2 Generalized estimating equations	203
10.3 Analysis using Stata	205
10.4 Exercises	218
<b>11 Some Epidemiology .....</b>	<b>221</b>
11.1 Description of data	221
11.2 Introduction to epidemiology	222
11.3 Analysis using Stata	228
11.4 Exercises	236
<b>12 Survival Analysis: Retention of Heroin Addicts in Methadone Maintenance Treatment .....</b>	<b>239</b>
12.1 Description of data	239
12.2 Survival analysis	242
12.3 Analysis using Stata	245
12.4 Exercises	258
<b>13 Maximum Likelihood Estimation: Age of Onset of Schizophrenia .....</b>	<b>263</b>
13.1 Description of data	263
13.2 Finite mixture distributions	263
13.3 Analysis using Stata	264
13.4 Exercises	277
<b>14 Principal Components Analysis: Hearing Measurement Using an Audiometer .....</b>	<b>281</b>
14.1 Description of data	281
14.2 Principal component analysis	283
14.3 Analysis using Stata	284
14.4 Exercises	291
<b>15 Cluster Analysis: Tibetan Skulls and Determinants of Pollution in U.S. Cities .....</b>	<b>295</b>
15.1 Description of data	295
15.2 Cluster analysis	297
15.3 Analysis using Stata	298
15.4 Exercises	311
<b>Appendix: Answers to Selected Exercises.....</b>	<b>315</b>
<b>References.....</b>	<b>327</b>
<b>Index.....</b>	<b>335</b>