Chapter R Packages, functions, data sets, and script files1

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| Chapter | R Package | Functions | Data Sets | Script files A |
| 1 |Introduction and Overview | http://cran.r-project.org/ | help()  data() |  |  |
| 2 |Multivariate Statistics: Issues and Assumptions | mvnormtest  normtest  nortest  normwhn.test  biotools | install.packages()  library()  attach()  head()  mshapiro.test()  jb.norm.test()  ad.test()  cvm.test()  lillie.test()  pearson.test()  sf.test()  normality.test1()  boxM()  det()  cor()  cov()  cov2cor()  data.frame()  rep()  options()  describeBy()  lapply()  factor() | > data()  attitude  iris | Chap2Assumptions.r |
| 3 |Hotelling T2 | ICSNP  mvtnorm  psych | names()  mean()  sd()  error.bars()  HotellingsT2()  matrix()  par()  plotmeans()  round()  cat()  t()  c() | Stevensp148.sav | Chap3Hotelling.r  Chap3Hotelling single sample.r  Chap3Hotelling independent sample.r  Chap3Hotelling dependent sample.r |
| 4| MANOVA | psych  nortest  mvnormtest  car  MASS | colnames()  rownames()  ICC()  cor.test()  shapiro.test()  manova()  summary()  summary.aov()  anova()  lm() | Source: Stevens (2009, p. 215, achievement data matrix)  Stevensp215.txt  Stevensp215mod.txt  > library(car)  > data()  Baumann.txt | Chap4MANOVA1.r  Chap4MANOVA2.r  Chap4factorialM.r |
| 5| MANCOVA | MASS  car  psych  MatchIt  Hmisc | effect()  plot()  abline()  matchit()  spss.get()  setwd()  write.table()  cbind() | Source: Stevens (2009, p. 302)  mancova.txt  Propensity.por | Chap5Mancova.r  Chap5PropensityScore.r |
| 6| Multivariate Repeated Measures | reshape  nlme  ez  psych  ggplot2  lmer4 | rbind()  melt()  lme()  ezANOVA()  ggplot()  geom\_line()  lmer()  pf() | Source: Tabachnick and Fidell (2007, p. 317)  multdv.txt  Source: Tabachnick and Fidell (6th Edition, ASCII file type)  dblmult.dat  Source: Raykov & Marcolides, p. 168-179.  ch5ex3.dat | Chap6ex1.r  Chap6ex2.r  Chap6ex3.r  Chap6Exercise5.r  Chap6WeightLoss.r |
| 7| Discriminant Analysis | MASS  biotools  CCA | lda()  boxM()  predict()  table()  diag()  prop.table()  chisq.test()  gl()  cca() | Source:  Field, Miles, & Field (2012, p. 720-722)  OCD.txt  Source: biotools library  > library(biotools)  > data(amis)  > amis | Chap7discrim2grp.r  Chap7discrim3grp.r  Chap7Discriminant  Chap7Exercise3 |
| 8| Canonical Correlation | stats  CCA  yacca | cancor()  matcor()  cc()  cca()  F.test.cca()  read.csv()  plt.cc()  comput() | Source:  UCLA (IDRE web data set - read by R script file)  mm.txt  > library(stats)  > data()  > data(LifeCycleSavings)  > LifeCycleSavings  LifeCycleSavings.txt  Source:  Tabachnick & Fidell (2007, p. 572)  Xvar.txt  Yvar.txt | Chap8Commonality.r  Chap8canonicalr.r  Chap8example.r  Chap8Exercise3.r |
| 9| Exploratory Factor Analysis | corpcor  GPArotation  psych  rela  MASS  parallel | setwd()  read.table()  file.choose()  corr.p()  paf()  cortest.bartlett()  cortest.mat()  cortest.normal()  cortest.jennrich()  itemanal()  fa()  print()  fa.parallel()  hist()  fa.diagram() | Papanastasiou & Schumacker (2014)  atr30.csv  > library (psych)  > data(Harman.8)  > Harman.8 | Chap9example.r  Chap9Exercise.r |
| 10| Principal Components Analysis | stats  psych  rela  MASS  parallel | cov2cor()  corr.p()  det()  eigen()  t()  round()  read.delim()  head()  tail()  paf()  cortest.bartlett()  principal()  alpha()  fa.parallel()  fa.diagram() sort() | Source: Raykov and Marcoulides (2008, p. 217)  S matrix (created in R program)  chap7ex1.dat  attitude.txt | Chap10PCbasics.r  Chap10Example.r  Chap10Exercise.r |
| 11| Multidimensional Scaling | MASS  stats  psych  vegan  SensoMineR  smacof  ape  HSAUR  psy | isoMDS()  cmdscale()  cor2dist()  wcmdscale()  indscal()  smacofSym()  pcoa()  scree.plot()  dist()  map()  Shepard()  lines()  text()  describe()  na.omit() | > library(stats)  > d  (created in R program using city distances)  > library(psych)  > data(iqitems)  > iqitems | Chap11\_EverittVoting.r  Chap11ex6.r  Chap11MetricMDSSex1.r  Chap11nonMetricMDSSex2.r |
| 12| Structural Equation Modeling | MVN  mvnormtest  sem  lavaan  corpcor | mardiaTest()  mshapiro.test()  cortest.bartlett()  as.matrix()  cov2cor()  cor2cov()  lower2full()  cortest.mat()  cor2pcor()  pcor2cor()  cfa()  lavaan()  modindices()  lavaan.diagram()  fitMeasures()  anova()  sem() | > library(stats)  > data(iris)  > iris  Source:  Schumacker & Lomax (2010, p. 171, Holzinger and Swineford matrix)  > library(sem)  > HScov  and created by R program  Source: Raykov & Marcoulides (2008, p. 317)  ch9ex4.dat  ch9ex4-boys.dat  ch9ex4-girls.dat  Source: Tabachnick & Fidell (2007, p. 687, ski matrix)  Created by R program  Schumacker & Lomax (2010, p. 342, data matrix)  Created by R program  Raykov & Marcoulides (2008)  Download zip file, then extract their data set:  ch13ex1\_mcm.dat | Chap12basic.r  Chap12adv.r  Chap12BasicSEM.r  Chap12CFAbi-factor.r  Chap12CFAGRP.r  Chap12ex5.r |

1 R functions re-used in other chapters are not always listed again.

A Some data sets are created or read by the R script programs, so not listed in the Data Set column