



insight

Research Services Associated

2020

STATISTICS WORKSHOPS



October- November

Online Format

Three workshops for statisticians and non-statisticians



A Gentle Introduction to Statistics in SPSS and R

Saturday -
Sunday
October 24/25



Introduction to Linear and Logistic Regression

Wednesday -
Thursday
October 28/29



Introduction to Longitudinal Data Analysis

Wednesday -
Thursday
November 4/5

About the Speaker

Dr Mark Griffin is the Founding Director of Insight Research Services Associated (www.insightrsa.com) and holds academic appointments at the University of Queensland. Mark serves on the Executive Committee for the Statistical Society of Australia and is the Founder and Co-Chair of the Special Interest Group for Business Analytics within the International Institute of Business Analysis. Mark has been the primary statistician for a number of large surveys, including a survey of 140,000 parents receiving the Positive Parenting Program in Queensland. Since the formation of Insight he has presented over 90 two-day and 15 five-day workshops in statistics around Australia.

A Gentle Introduction to Statistics in SPSS and R

ONLINE FORMAT

October 24/25

For many people the field of statistics can be incredibly daunting. This workshop is designed as a gentle introduction to the field of statistics, where absolutely no prior knowledge of statistics is assumed. Workshop participants will also be introduced to two of the most popular statistical software packages, SPSS and R (participants can choose which package they would like to use during individual hands-on exercises throughout the workshop).

This workshop is intended for non-statisticians wishing to develop a solid foundation in the use of these techniques. No prior knowledge of statistics is assumed. Participants will also be introduced to SPSS and R, where no prior knowledge of these software packages is also assumed.

What it will cover

- The role of statistics in academic research – summarising data, exploring data, and testing a hypothesis
- The different types of variables – continuous and categorical
- Simple graphs for viewing a dataset – scatterplot, histogram, and boxplot
- An overview of statistical tests and p-values
- A flowchart for identifying which statistical method to use for particular research questions
- T-tests and chi-squared tests
- The importance of testing assumptions made by statistical tests
- Non-parametric statistics (such as the Mann-Whitney test)
- A brief overview of linear and logistic regression
- A very brief overview of more advanced statistical methods

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<https://www.linkedin.com/company/53209145/member/>

Introduction to Linear and Logistic Regression

ONLINE FORMAT

October 28/29

In this workshop we will explore the foundation for linear and logistic regression. Workshop participants will be introduced to these statistical concepts using one of three popular statistical software packages: SPSS, Stata, and R.

This workshop is intended for non-statisticians wishing to develop a solid foundation in the use of these techniques. A basic knowledge of statistics is assumed, but participants need not have a prior knowledge of linear or logistic regression.

This workshop is intended for non-statisticians wishing to develop a solid foundation in the use of these techniques. A basic knowledge of statistics is assumed, but participants need not have a prior knowledge of linear or logistic regression.

What it will cover

In this workshop we will explore the foundation for linear and logistic regression.

- the basics of statistics (including concepts such as p-values and the role of statistical tests)
- the fundamental equations for linear and logistic regression
- the assumptions that need to be checked when performing regression (linearity, normality, constant variance, no outliers)
- multiple regression and the effect of confounders
- variable selection (choosing which variables to select for a linear regression model)
- the differences between linear and logistic regression
- interpreting the regression coefficients for logistic regression
- nominal and ordinal regression
- Poisson regression (for count variables)

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Introduction to Longitudinal Data Analysis

ONLINE FORMAT

November 4/5

In this workshop we will examine the theory of longitudinal data analysis and the handling of missing data. Workshop participants will be introduced to these statistical concepts using one of three popular statistical software packages: SPSS, Stata, and R.

This workshop is intended for non-statisticians and statisticians new to the field of longitudinal data analysis. A basic knowledge of linear regression is assumed.

What it will cover

- The differences between independent, clustered, and longitudinal data
- A review of linear regression and Analysis of Variance
- Tukey tests (for identifying which groups are different)
- Levene's test (for assessing whether the variance differs between groups)
- The Non-parametric equivalent forms for Analysis of Variance
- Mixed Effects models (fixed effects for the population means, and random effects for the variation between groups)
- Hierarchical and multi-level models
- Viewing longitudinal data as a form of multivariate data
- Different expressions for the correlation matrix for multivariate data
- Generalised Estimating Equations
- Likelihood ratio test (for comparing different correlation structures)
- The problem with missing data in longitudinal studies
- Data Missing Completely At Random, Missing At Random, and Missing Not At Random
- Multiple Imputation
- Monotone and intermittent missingness

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The Use of Computer Hands-on Exercises

Teaching styles:

- Lectures and class discussions
- Computer exercises

These workshops will use a combination of both. During the lecture sessions the theory of statistics will be presented and will be discussed in an interactive manner with the class.

Computer exercises

Each workshop will involve the use of laptop computers. For these sessions participants will be asked to bring their own laptops and will be able to choose which statistical software they would like to use during the workshop. For this workshop, participants will be able to choose which package (R, SPSS, or Stata) they would like to use during individual hands-on exercises throughout the workshop.

Please note that a copy of R will be given to all participants at the start of the workshop, if participants would like to use one of the other software packages then it will be the responsibility of the participant to ensure that they have that software package available on their laptop.

ONLINE FORMAT

The workshops will be presented via Zoom. All registered participants will be emailed a link and Zoom meeting ID prior to the presentation. If you have the Zoom app open, you can also join by typing in the meeting ID number. We recommend joining 10 minutes before the start of class just in case you have any technical issues. Further information will be sent to you about using Zoom for the workshop. Each day the presentations will be recorded and available for 7 days.

- There will be times throughout the workshop where PowerPoint presentations will be presented.
- There will be times throughout the workshop where Mark will be working through the workshop exercises as a demonstration.
- There will be times throughout the workshop where you will be able to work through the exercises on your own or be able to go onto a breakout room with Mark to ask one on one questions.

REGISTRATION AND COST

Cost

Each workshop will cost **\$550** per person per workshop (including GST)

Registration

To register for one or more of these workshops please visit the Insight website at <https://insightrsa.com/registration>

If you have further questions the workshop presenter, Mark Griffin, can be contacted by email at m.griffin@insightrsa.com or by phone on 0448 176 926.

WORKSHOP PROGRAM FORMAT

	Day 1		Day 2
9:00-10:30	Lecture 1	9:00-10:30	Lecture 3
10:30-11:00	Morning Tea	10:30-11:00	Morning Tea
11:00-12:30	Practical 1	11:00-12:30	Practical 3
12:30-1:30	Lunch	12:30-1:30	Lunch
1:30-3:00	Lecture 2	1:30-3:00	Lecture 4
3:00-3:30	Afternoon Tea	3:00-3:30	Afternoon Tea
3:30-5:00	Practical 2	3:30-5:00	Practical 4